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1897-98

CATALOGUE

OF THE

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OF THE
UNIVERSITY OF ILLINOIS

University of Maine

1897-1898

ORONO, MAINE

AUGUSTA:
Kennebec Journal Print
1898

"I praise New England because it is the country in the world where is the freest expenditure for education. We have already taken, at the planting of the colonies, (for aught I know for the first time in the world), the initial step, which for its importance might have been resisted as the most radical of revolutions, thus deciding at the start the destiny of this country,—this, namely that the poor man, whom the law does not allow to take an ear of corn when starving, nor a pair of shoes for his freezing feet, is allowed to put his hand into the pocket of the rich, and say, 'You shall educate me, not as you will, but as I will; not alone in the elements, but, by further provision, in the languages, in sciences, in the useful and in the elegant arts.' The child shall be taken up by the state, and taught at the public cost, the rudiments of knowledge, and, at last, the ripest results of art and science."—*Ralph Waldo Emerson.*

The University of Maine
ORONO, MAINE

A. W. HARRIS, Sc. D., PRESIDENT

Jan. 13, 1899.

Mr. James Russell Parsons, Jr.,

Albany, N.Y.

Dear Sir:-

The requirements for admission to the Classical Course of the University of Maine are as follows:-

1.- Elementary subjects. English Grammar.

2.- Language.

(a) Greek. (c) English

(b) Latin (d) French or German.

3.- History

(a) Greek (b) Roman

4.- Mathematics.

(a) Plane Geometry (b) Algebra.

5.- Ancient Geography.

The entrance requirements in Greek are:-

1.- Greek Grammar including Prosody.

2.- Greek Prose Composition. Woodruff's exercises in Greek Prose Composition or an equivalent.

3.- Xenophone. (a) Anabasis. Books I.II.III.IV. (b) Translation at sight of easy passages.

4.- Homer. Iliad. Books I, II, III.

For full particulars for other requirements see requirements for Latin-Sci-

The University of Maine

ORONO, MAINE

A. W. HARRIS, Sc. D., PRESIDENT

entific Course in the catalogue which I forward under another cover.

Yours truly,

E. A. Balentine.

Secretary.

A VIEW ON THE CAMPUS.

CATALOGUE

OF THE

University of Maine

1897-1898

ORONO, MAINE

AUGUSTA:
Kennebec Journal Print
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CALENDAR.

FALL TERM, 1897.

August	30, Monday,	Before-term examinations begin.
August	31, Tuesday,	Entrance examinations begin.
September	1, Wednesday,	Fall term begins.
November	23, Tuesday,	Meeting of the Board of Trustees.
November	25, Thursday,	Thanksgiving recess.
November	28, Sunday,	
December	3, Friday,	Sophomore prize declamation.
December	23, Thursday,	Term ends.

SPRING TERM, 1898.

January	31, Monday,	Before-term examinations begin.
February	1, Tuesday,	Entrance examinations begin.
February	2, Wednesday,	Spring term begins.
February	22, Tuesday,	Washington's birthday.
May	20, Friday,	Ivy day.
May	30, Monday,	Memorial day.
June	1, Wednesday,	Farmers' field day.
June	4, Saturday,	Senior vacation begins.
June	18, Saturday,	Junior exhibition.
June	19, Sunday,	Baccalaureate sermon.
June	20, Monday,	Convocation.
June	20, Monday,	Class day.

June	21, Tuesday,	Meeting of the Board of Trustees.
June	21, Tuesday,	Exhibition drill.
June	21, Tuesday,	Reception by the fraternities.
June	21, Tuesday,	Reception by the President.
June	22, Wednesday,	Commencement.
June	22, Wednesday,	Commencement dinner.
June	22, Wednesday,	Meeting of the Alumni Association.
June	22, Wednesday,	Commencement concert.
June	23, Thursday,	Entrance examinations begin.

FALL TERM, 1898.

September	19, Monday,	Before-term examinations begin.
September	20, Tuesday,	Entrance examinations begin.
September	21, Wednesday,	Fall term begins.
November	22, Tuesday,	Meeting of the Board of Trustees.
November	24, Thursday,	Thanksgiving recess.
November	27, Sunday,	
December	2, Friday,	Sophomore prize declamation.
December	22, Thursday,	Term ends.

SPRING TERM, 1899.

January	9, Monday,	Before-term examinations begin.
January	10, Tuesday,	Entrance examinations begin.
January	11, Wednesday,	Spring term begins.
June	14, Wednesday,	Commencement.

THE UNIVERSITY OF MAINE.

ESTABLISHMENT.

By an Act of Congress, approved July 2, 1862, it was provided that there should be granted to the states, from the public lands, "thirty thousand acres for each Senator and Representative in Congress," from the sale of which there should be established a perpetual fund "the interest of which shall be inviolably appropriated, by each state which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college where *the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts.....in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.*" The Act forbade the use of any portion of the principal or interest of this fund, for the purchase, erection, or maintenance of buildings; and the several states claiming and taking the benefit of the provisions of the Act were required, "to provide within five years not less than one college" to carry out the purposes of the Act.

The State accepted this grant in 1863, and in 1865 constituted "a body politic and corporate, by the name of the Trustees of the State College of Agriculture and the Mechanic Arts." The Trustees were authorized to receive and hold donations, to select the professors and other officers of the college, to establish the conditions for admission, to lay out courses of study, to grant degrees, and to exercise other usual powers and privileges.

The Governor and Council were given the right, "to examine into the affairs of the college, and the doings of the trustees, and to inspect all their records and accounts, and the buildings and premises occupied by the college."

It was provided that in addition to the studies especially required by the Act of Congress, the college should teach such other studies as the facilities would permit. Military instruction was explicitly ordered.

The Legislature of 1897 changed the name of the institution to "The University of Maine."

ENDOWMENT AND INCOME.

The State of Maine received, under the Act of Congress, two hundred and ten thousand acres of public land, from which the university has realized an endowment fund of about $118,300. This has been increased by $100,000, the bequest of Abner Coburn of Skowhegan, who was for many years president of the Board of Trustees. The town of Orono contributed $8,000, and the town of Oldtown $3,000, for the purchase of the site on which the buildings stand. The State has appropriated about $300,000 for the material equipment.

Under an Act of Congress approved March 2, 1887, the university receives $15,000 annually for the maintenance of the department known as the Agricultural Experiment Station.

Under an Act of Congress approved August 30, 1890, the university received for its more complete endowment and maintenance, $23,000 for the year ending June 30, 1897.

The university receives, during 1897 and 1898, $20,000 annually from the State for current expenses. The other receipts are chiefly student fees.

THE BOARD OF TRUSTEES.

Hon. HENRY LORD, *President*,	Bangor.
Hon. WILLIAM THOMAS HAINES, B. S., LL. B., *Secretary*,	Waterville.
GREENVILLE JEFFERSON SHAW,	Hartland.
Hon. RUSSELL BENJAMIN SHEPHERD,	Skowhegan.
ARTHUR LEE MOORE, B. S.,	Orono.
Hon. ELLIOTT WOOD,	Winthrop.
Hon. CHARLES PLUMMER ALLEN, B. S.,	Presque Isle.
Hon. BENJAMIN FRANKLIN BRIGGS,	Auburn.

EXECUTIVE COMMITTEE.

Trustees LORD, HAINES, and ALLEN.

TREASURER.

Hon. ISAIAH KIDDER STETSON, B. Ph., Bangor.

THE EXPERIMENT STATION COUNCIL.

BENJAMIN FRANKLIN BRIGGS, ...Auburn.
ARTHUR LEE MOORE, B. S., ... Orono.
ELLIOTT WOOD, ...Winthrop.
Committee of the Board of Trustees.
ABRAM WINEGARDNER HARRIS, Sc. D., *President*, Orono.
President of the College.
CHARLES DAYTON WOODS, B. S., *Secretary*,.....Orono.
Director of the Station.
BENJAMIN WALKER McKEEN,..... .....Fryeburg.
Representative of the State Board of Agriculture.
ORA OTIS CROSBY, ...Albion.
Representative of the Maine State Grange.
CHARLES S. POPE,
Representative of the State Pomological Society.
JAMES MONROE BARTLETT, M. S.,.....Orono.
LUCIUS HERBERT MERRILL, B. S,.....Orono.
FRANCIS LEROY HARVEY, Ph. D., ...Orono.
FREMONT LINCOLN RUSSELL, V. S., ...Orono.
WELTON MARKS MUNSON, M. S.,.....Orono.
GILBERT MOTTIER GOWELL, M. S., ...Orono.
Members of the Station Staff.

THE FACULTY AND OTHER OFFICERS.

ABRAM WINEGARDNER HARRIS, Sc. D.,.....Campus.
President.

MERRITT CALDWELL FERNALD, Ph. D.,.....Bennoch Street.
Emeritus Professor of Mathematics.

GEORGE HERBERT HAMLIN, C. E.,.....Main Street.
Professor of Civil Engineering.

ALFRED BELLAMY AUBERT, M. S.,.....Campus.
Professor of Chemistry.

ALLEN ELLINGTON ROGERS, M. A.,.....College Street.
Professor of Civics and Logic.

WALTER FLINT, M. E.,.....College Street.
Professor of Mechanical Engineering.

JAMES MONROE BARTLETT, M. S.,.....College Street.
Chemist in the Experiment Station.

LUCIUS HERBERT MERRILL, B. S.,.....Forest Avenue.
Instructor in Biological Chemisty, and
Chemist in the Experiment Station.

FRANCIS LEROY HARVEY, Ph. D.,.....Forest Avenue.
Professor of Natural History, and Entomologist of the Experiment Station.

JAMES NORRIS HART, C. E.,.....Campus.
Professor of Mathematics and Astronomy.

WELTON MARKS MUNSON, M. S.,.....Campus.
Professor of Horticulture, and Horticulturist of the Experiment Station.

HORACE MELVYN ESTABROOKE, M. S., M. A.,....Main Street.
Professor of English.

JAMES STACY STEVENS, PH. D.,.....Main Street.
Professor of Physics.

GILBERT MOTTIER GOWELL, M. S.,.....Campus.
Professor of Animal Industry, and Agriculturist of the Experiment Station.

CHARLES DAYTON WOODS, B. S.,.....Main Street.
Professor of Agriculture, and Director of the Experiment Station.

HERBERT NATHAN ROYDEN, U. S. A.,.....Middle Street.
Professor of Military Science.

NATHAN CLIFFORD GROVER, B. C. E.,.....Campus.
Associate Professor of Civil Engineering.

WILBUR FISK JACKMAN, B. S., Ph. C.,....North Main Street.
Assistant Professor of Pharmacy.

*HOWARD SCOTT WEBB, M. E.,.....North Main Street.
Instructor in Mechanical Engineering.

FREMONT LINCOLN RUSSELL, V. S.,.....College Street.
Instructor in Biology, and Veterinarian in the Experiment Station.

BURTON SMITH LANPHEAR, M. E.,.....College Street.
Instructor in Electrical Engineering.

*EDWIN BRYANT NICHOLS, B. A.,.....Bennoch Street.
Instructor in Modern Languages.

WALLACE STEDMAN ELDEN, M. A.,.....Main Street.
Instructor in Latin and French.

PERLEY WALKER, B. M. E.,.....Peters Street.
Instructor in Mechanical Engineering.

REGINALD GOODELL, M. A.,..... .....Main Street.
Instructor in Modern Languages.

HARVEY WATERMAN THAYER, B. A.,.....Campus.
Instructor in English and German.

GELLERT ALLEMAN, Ph. D.,.....Main Street.
Instructor in Chemistry.

RALPH KNEELAND JONES, B. S.,.....Main Street.
Librarian.

HAROLD SHERBURNE BOARDMAN, B. C. E.,.....Bangor.
Tutor in Drawing.

CHARLES PARTRIDGE WESTON, B. C. E.,.....Campus.
Tutor in Physics.

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* On leave.

RICHARD MILLS ANDREWS, B. A.,.....Campus.
Tutor in Mathematics.

STANLEY JOHN STEWARD, B. M. E.,.....Mill Street.
Tutor in Shop-work.

ORA WILLIS KNIGHT, B. S.,.....Bangor.
Assistant Chemist in the Experiment Station.

WILLIAM THOMAS BRASTOW, B. C. E.,.....Peters Street.
Assistant in Physics.

ANDREW JARVIS PATTEN, B. S.,.....Bangor.
Assistant Chemist in the Experiment Station.

ALLEN ROGERS, B. S.,.....Campus.
Assistant in Chemistry.

EDWIN CARLETON UPTON, B. S.,.....Campus.
Assistant in English.

STANWOOD HILL COSMEY, B. C. E.,.....Bangor.
Assistant in Civil Engineering.

PERLEY FRANCIS GOODRIDGE, B. M. E.,.....Main Street.
Assistant in Mechanical Engineering.

ELIZABETH ABBOTT BALENTINE,.....Campus.
Secretary to the President and Secretary of the Faculty.

ADMISSION.

Applicants for admission to the college must pass the required examinations, or present satisfactory certificates of fitness, and file with the Treasurer a bond for $150 signed by two bondsmen, as security for the payment of term bills. A cash deposit covering the bills of one term will be accepted in place of a bond. No distinction is made in regard to sex or place of residence.

Candidates for advanced standing are examined in the preparatory studies and in those previously pursued by the classes they propose to enter, or other equivalent studies. Certificates will be accepted for the preparatory work, but not for any part of the college work, unless done in some other college.

A student who has accomplished half or more of the preparatory course may be examined on that part, and receive credit therefor.

The attention of students preparing for the entrance examinations is called to the need of most careful work in mathematics. A good preparation in algebra and geometry is especially important for those who expect to enter engineering courses. Schools should give a part of the work in algebra and geometry or a review of these subjects during the last year.

The preparation in English should include the rapid reading of numerous standard works of fiction, the careful reading of other standard works, the writing of themes based upon this reading, and the frequent writing of themes on simple and familiar subjects, with exercises in punctuation, capitalization, etc.

Persons, not candidates for a degree, who wish to take special studies, will be permitted to do so upon giving satisfactory evidence that they are prepared to take the desired studies. If they subsequently desire to become candidates for a degree, or to take

a regular course, they may be required to pass the entrance examinations.

No examinations are required for admission to the short winter courses.

College graduates who wish to enter a technical course will be admitted to the junior class without examination. Students in general college courses, who expect to pursue technical courses after graduation, should avail themselves of all opportunities for the study of mathematics, physics, chemistry, and drawing, as a preparation for engineering courses; and of physics, chemistry, and drawing, for chemical and biological courses.

ENTRANCE EXAMINATIONS.

Examinations are held at Orono, beginning on the day before the opening of each term, and on the day after commencement. Examinations will be held, if desired, in each county of the State. These examinations are held on the day after commencement, and persons desiring examinations at such places must notify the President not later than June 1.

To save expense to candidates, examination papers will be sent to any satisfactory person who will consent to conduct an examination. The questions are to be submitted under the usual restrictions of a written examination, and the answers returned to the university accompanied by the indorsement of the examiner.

For the CLASSICAL COURSE the requirements have not been fixed. Candidates may obtain information by addressing the President.

Candidates for the CHEMICAL, AGRICULTURAL (four years), PREPARATORY MEDICAL, and PHARMACY (four years) COURSES are examined on—*Elementary Subjects*, Arithmetic, English Grammar, Physiology; *Language*, English; *History*, United States; *Mathematics*, Plane Geometry, Algebra; *Science*, Two of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for the CIVIL ENGINEERING, MECHANICAL ENGINEERING, and ELECTRICAL ENGINEERING COURSES are examined on—*Elementary Subjects*, Arithmetic, English Grammar, Physiology; *Language*, English; *History*, United States; *Mathematics*, Plane and Solid Geometry, Algebra; *Science*, Two of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for the LATIN SCIENTIFIC COURSE are examined on—*Elementary Subjects*, Arithmetic, English Grammar, Physiology; *Language*, English, Latin, and either French or German; *History*, United States, Roman; *Mathematics*, Plane Geometry, Algebra.

Candidates for the SCIENTIFIC COURSE are examined on—*Elementary Subjects*, Arithmetic, English Grammar, Physiology; *Language*, English, and either French or German; *History*, United States, and one of the following,—General, Roman, English; *Mathematics*, Plane Geometry, Algebra; *Science*, Two of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for the SHORT COURSES IN AGRICULTURE (one and two years) are examined on—*Elementary Subjects*, Arithmetic, English Grammar, Physiology; *Language*, English; *History*, United States; *Mathematics*, Algebra through simple equations of the first degree; *Science*, One of the following,—Botany, Chemistry, Physical Geography, Physics.

Candidates for the SHORT COURSE IN PHARMACY (two years) are examined on—*Elementary Subjects*, Descriptive Geography, Arithmetic, English Grammar, Physiology; *History*, United States; *Mathematics*, Algebra through simple equations of the first degree.

SUBSTITUTES.—The requirements for the Latin Scientific Course will be accepted for any other course. One year of Latin will be accepted as a substitute for one of the following groups: (a) Arithmetic, English Grammar and Physiology; (b) French or German; (c) One science.

French or German will be accepted as a substitute for one of the following groups: (a) Arithmetic, English Grammar, Physiology; (b) One science.

Other real equivalents will be accepted for any of the requirements except Mathematics, English, and Latin.

ADDITIONAL REQUIREMENTS.—In 1899 the requirements for The Chemical, Agricultural (4 years), Preparatory Medical, Pharmacy (4 years), and Engineering Courses will include one foreign language, either ancient or modern, as the candidate may prefer.

For the requirements for admission to the Law School, see the article on the Law School.

ENTRANCE REQUIREMENTS FOR ALL COURSES.

THE STARS INDICATE THE STUDIES REQUIRED.

Studies.	General Courses.			Technical Scientific Courses.				Engineering Courses.			Short Courses.		
	Classical.	Latin Scientific.	Scientific.	Chemical.	Agricultural.	Prep. Medical.	Pharmacy.	Civil Engin.	Mech. Engin.	Elect. Engin.	Pharmacy, 2 yrs.	Agricult., 2 yrs.	Agricult., 1 yr.
Elementary: a													
Geography											*		
Arithmetic		*	*	*	*	*	*	*	*	*	*	*	*
Eng. Gram		*	*	*	*	*	*	*	*	*	*	*	*
Physiology		*	*	*	*	*	*	*	*	*	*	*	*
	See note												
Language: b													
English		*	*	*	*	*	*	*	*	*		*	*
French or German		*	*c										
Latin		*											
History:													
United States		*	*	*	*	*	*	*	*	*	*	*	*
General													
Roman		*	*d							1			
English													
Mathematics:													
Plane Geometry		*	*	*	*	*	*	*	*	*			
Solid Geometry, *e.*								*	*	*			
Algebra		*	*	*	*	*	*	*	*	*	*f	*f	*f
Science: a													
Botany													
Chemistry			*g	*g	*g	*g	*g	*g	*g	*g		*h	*h
Phys. Geog			*	*	*	*	*	*	*	*			
Physics													

a—One year of Latin, or of a modern language will be accepted as a substitute for all the elementary studies, or for one science.

b—In 1899, one foreign language, either ancient or modern as the candidate may prefer, will be required for the technical scientific, and the engineering courses.

c—Either French of German; one year of Latin will be accepted as a substitute.

d—General, or Roman, or English History in addition to United States History.

e—In 1898 solid geometry will be required for engineering courses. See page 22.

f—Through simple equations of the first degree only.

g—Two sciences, from the list of four, are required.

h—One science, from the list of four, is required.

Note—The requirements for the classical course will not be fixed until after the catalogue goes to print. They may be obtained on request from the President.

ENTRANCE REQUIREMENTS.

The following statements will show in detail the requirements in each subject.

Elementary Subjects.

Descriptive Geography.—The usual school course. Required for the short course in pharmacy only.

Arithmetic.—The usual school course including the metric system of weights and measures.

English Grammar.—The usual school course. Attention should be given to punctuation and use of capital letters.

Physiology.—Cells and tissues, skeleton, muscles, blood and circulation, respiration, nutrition and digestion, lymphatic system, excretory organs, nervous system, special senses, hygiene.

Language.

English.—I. *Reading and Practice.* Each candidate will be required to present evidence of a general knowledge of the substance of the books mentioned below and to answer simple questions on the lives of their authors. The examination will usually be the writing of one or two paragraphs on each of several topics. The treatment of these topics is designed to test the power of clear and accurate expression, and will call for only a general knowledge of the substance of the books. In place of this test, the candidate may present an exercise book, certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

In 1898, this part of the examination will be based upon: Milton's Paradise Lost, books I and II; Pope's Iliad, books I and XXII; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Ancient Mariner; Southey's Life of Nelson; Carlyle's Essay on Burns; Lowell's Vision of Sir Launfal; Hawthorne's House of the Seven Gables.

In 1899, it will be based upon: Dryden's Palamon and Arcite; Pope's Iliad, books I, VI, XXII, and XXIV; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's Ancient Mariner; De Quincey's The Flight

of a Tartar Tribe; Cooper's The Last of the Mohicans; Lowell's The Vision of Sir Launfal; Hawthorne's The House of the Seven Gables.

In 1900, it will be based upon: Dryden's Palamon and Arcite; Pope's Iliad, books I, VI, XXII, and XXIV; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's The Vicar of Wakefield; Scott's Ivanhoe; De Quincey's The Flight of a Tartar Tribe; Cooper's The Last of the Mohicans; Tennyson's The Princess; Lowell's The Vision of Sir Launfal.

II. *Study and Practice.* This part of the examination presupposes a careful study of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to express his knowledge with clearness and accuracy.

In 1898, this part of the examination will be based upon: Shakspere's Macbeth; Burke's Speech on Conciliation with America; De Quincey's Flight of a Tartar Tribe; Tennyson's Princess.

In 1899, it will be based upon: Shakspere's Macbeth; Milton's Paradise Lost, books I and II; Burke's Speech on Conciliation with America; Carlyle's Essay on Burns.

In 1900, it will be based upon Shakspere's Macbeth; Milton's Paradise Lost, books I and II; Burke's Speech on Conciliation with America; Macauley's Essays on Milton and Addison.

FRENCH. — The candidate offering French, must have an accurate knowledge of the grammar, and especially of the regular and irregular verbs; an elementary knowledge of French composition; the ability to read at sight French prose of average difficulty.

GERMAN.—The candidate offering German must have an accurate knowledge of the essentials of the grammar; an elementary knowledge of German composition; the ability to read a classical play, with fair ease.

LATIN.—The grammar, including prosody; Cæsar's Gallic War, books I, II, III, and IV; Cicero's four orations against Cataline, and those for Archias and for the Manilian Law; Virgil's Eclogues and the Æneid, books I, II, III, IV, V, and VI; the sight translation of Latin passages of average difficulty; translation into Latin of simple English sentences, and easy narrative

passages based on the prose authors read. For the last, a vocabulary of unusual words will be furnished. Equivalent readings will be accepted for those prescribed.

History.

United States History.—An elementary knowledge such as may be obtained from Higginson's History of the United States.

General History.—Myer's General History.

Roman History.—Allen's Short History of the Roman People, to the death of Marcus Aurelius.

English History.—An elementary knowledge such as may be obtained from Montgomery's History of England.

Mathematics.

Plane Geometry.—The first five books of Wells' or Wentworth's Geometry, or an equivalent. The preparation should not neglect numerical exercises, original propositions, or the neat and careful construction of figures. The examination will include some original propositions for demonstration or construction.

Solid Geometry.—Books VI, VII, VIII, and IX of Wells', or books VI, VII and VIII of Wentworth's Geometry, or an equivalent. The examination will be planned to test the candidate's ability to apply the theorems to the computation of surfaces and volumes, as well as his readiness in demonstration. Required only of candidates for the engineering courses.

As this is a new requirement, and not taught in all preparatory schools, students who cannot offer it, but are otherwise well fitted, will be allowed to take it as an extra study after admission. This privilege will be withdrawn after two or three years.

Algebra.—The elements, equations of the first degree, radicals, quadratic equations, arithmetical and geometrical progression. A satisfactory preparation may be obtained from Greenleaf's Elementary, Newcomb's, Wells' Academic or Wentworth's School, Algebra.

Candidates for the short courses in agriculture and the short course in pharmacy are not examined on the topics beyond simple equations of the first degree.

Science.

Botany.—An elementary course which will bring the student in contact with plants. Gray's Lessons in Botany, Spaulding's Introduction to Botany, or Bergen's Elements of Botany, will serve as a satisfactory guide.

Chemistry.—The necessary ground is covered by the following text-books: Fisher, Remsen, Roscoe (inorganic part), Shepard, Storer and Lindsay, Williams.

Physical Geography.—A satisfactory preparation may be obtained from Appleton's Physical Geography.

Physics.—A satisfactory treatment of this subject may be found in Avery's or Gage's Physics.

CERTIFICATES OF FITNESS.

Any preparatory school whose course of instruction covers in a satisfactory manner the requirements for admission, may be admitted to the list of approved schools. Application for such approval should be made to the President of the university, and must be accompanied by a detailed statement of the course of study.

Candidates for admission from these schools will be admitted to the freshman class upon the certificate of the principals, showing that the required studies have been completed satisfactorily. Certificates must be made out on blanks furnished by the university.

APPROVED SCHOOLS.

Athol High School, *Athol*, *Mass.*,
F. C. Avery, Principal.

Bangor High School, *Bangor*,
Henry K. White, M. A., Principal.

Bar Harbor High School, *Bar Harbor*,
Prescott Keyes, Jr., B. C. E., Principal.

Bath High School, *Bath*,
H. E. Cole, M. A., Principal.

Belfast High School, *Belfast*,
Hugh D. McLellan, Principal.

Berwick Academy, *South Berwick*,
Edward D. Merriman, B. A., Principal.

Blue Hill Academy, *Blue Hill*,
S. Everett Marks, Principal.
Boynton High School, *Eastport*,
John B. Warren, M. A., Principal.
Brewer High School, *Brewer*,
Elmer T. Boyd, B. A., Principal.
Bridge Academy, *Dresden Mills*,
Alonzo A. Morelen, B. A., Principal.
Bridgton Academy, *North Bridgton*,
C. C. Spratt, B. A., Principal.
Bridgton High School, *Bridgton*,
Walter L. Gray, B. A., Principal.
Calais High School, *Calais*,
Verne M. Whitman, M. A., Principal.
Caribou High School, *Caribou*,
William C. Hill, Principal.
Cherryfield Academy, *Cherryfield*,
Leroy S. Dewey, B. A., Principal.
Coburn Classical Institute, *Waterville*,
F. W. Johnson, M. A., Principal.
Cony High School, *Augusta*,
C. F. Cook, M. A., Principal.
Deering High School, *Deering*,
Edgar H. Crosby, M A., Principal.
Dexter High School, *Dexter*,
W. S. Brown, B. A., Principal.
Dover English High School, *Dover*,
W. J. Rideout, Principal.
East Corinth Academy, *East Corinth*,
John B. Merrill, B. A., Principal.
East Maine Conference Seminary, *Bucksport*,
W. A. Hutchinson, M. A., President.
Edward Little High School, *Auburn*,
J. F. Moody, B. A., M. A., Principal.
Ellsworth High School, *Ellsworth*,
H. A. Moore, B. A., Principal.
English High School, *Boston*, *Mass.*,
Robert E. Babson, B. A., Principal.
Farmington High School, *Farmington*,
Charles M. Pennel, B. A., Principal.

Fort Fairfield High School, *Fort Fairfield*,
Wm. L. Bonney, M. A., Principal.
Foxcroft Academy, *Foxcroft*,
W. R. Fletcher, B. A., Principal.
Framingham Academy, *Framingham*, *Mass.*,
John H. Parsons, M. A., Principal.
Freeport High School, *Freeport*,
Will O. Hersey, B. A., Principal.
Gardiner High School, *Gardiner*,
William L. Powers, M. A., Principal.
Gould's Academy, *Bethel*,
F. E. Hanscom, Principal.
Greeley Institute, *Cumberland Center*,
Edgar L. Pennell, B. A., Principal.
Guilford High School, *Guilford*,
Leland A. Ross, B. A., Principal.
Hallowell High School, *Hallowell*,
George W. Singer, B. A., Principal.
Hampden Academy, *Hampden*,
George C. Webber, B. A., Principal.
Hebron Academy, *Hebron*,
W. E. Sargent, M. A., Principal.
Higgins Classical Institute, *Charleston*,
H. Warren Foss, B. A., Principal.
Lewiston High School, *Lewiston*,
G. H. Libby, B. A., Principal.
Limington Academy, *Limington*,
Herbert L. Whitman, M. A., Principal.
Lincoln Academy, *Newcastle*,
George H. Larrabee, M. A., Principal.
Lisbon High School, *Lisbon*,
Everard C. Megguire, M. A., Principal.
Machias High School, *Machias*,
Herbert L. Palmer, B. A., Principal.
Madison High School, *Madison*,
Fred L. Tapley, Principal.
Maine Wesleyan Seminary, *Kent's Hill*,
Rev. A. F. Chase, Ph. D., President.
Milo High School, *Milo*,
Charles E. Perkins, Principal.

Monson Academy, *Monson*,
Junius E. Roberts, B. A., Principal.
North Yarmouth Academy. *Yarmouth*,
Rev. B. P. Snow, M. A., Principal.
Norway High School, *Norway*,
Arthur G. Wiley, B. A., Principal.
Oakland High School, *Oakland*,
Lyman K. Lee, B. A., Principal.
Oldtown High School, *Oldtown*,
Harry T. Watkins, B. A., Principal.
Orono High School, *Orono*,
S. H. Powell, M. A., Principal.
Palmer High School, *Palmer*, *Mass.*,
A. C. Thompson, B. A., Principal.
Parsonsfield Seminary and Piper High School, *N. Parsonsfield*,
Isaiah Trufant, M. A., Principal.
Patten High School, *Patten*,
Hannibal H. Chapman, B. A., Principal.
Pennell Institute, *Gray*,
W. B. Andrews, M. A., Principal.
Phillips High School, *Phillips*,
Ernest E. Morse, B. A., Principal.
Portland High School, *Portland*,
Albro E. Chase, B. A., Principal.
Plymouth High School, *Plymouth*,
Agnes W. Lindsey, Principal.
Richmond High School, *Richmond*,
Frederick J. Libby, B. A., Principal.
Ricker Classical Institute, *Houlton*,
Arthur M. Thomas, M. A., Principal.
Rockland High School, *Rockland*,
L. E. Moulton, B. A., Principal.
Skowhegan High School, *Skowhegan*,
F. G. Farrington, B. A., Principal.
South Paris High School, *South Paris*,
L. P. Gerrish, B. A., Principal.
South Portland High School, *South Portland*,
Ralph A. Parker, B. A., Principal,
Thomaston High School, *Thomaston*,
Albert S. Cole, B. A., Principal.

Thornton Academy, *Saco*,
Edwin P. Sampson, M. A., Principal.
Topsham High School, *Topsham*,
John A. Cone, Principal.
Warren High School, *Warren*,
F. E. Russell, M. A. Principal.
Washington Academy, *East Machias*,
Fred. O. Small, B. A., Principal.
Waterville High School, *Waterville*,
S. K. Marsh, M. A., Principal.
Westbrook High School, *Westbrook*,
Fred. W. Freeman, M. A., Principal.
Westbrook Seminary, *Deering*,
Rev. H. S. Whitman, M. A., President.
Wilton Academy, *Wilton*,
Drew T. Harthorn, M. A., Principal.
Yarmouth High School, *Yarmouth*,
Herbert M. Moore, B. A., Principal.

THE BUILDINGS AND THEIR EQUIPMENT.

WINGATE HALL.—The most conspicuous building on the campus, Wingate Hall, named in honor of William P. Wingate of Bangor, long an honored member of the board of trustees, is a three-story brick structure rectangular in form, with a handsome clock tower. It was erected for the departments of civil and mechanical engineering, but is at present occupied in part by other departments. On the ground floor are two large designing rooms, recitation rooms, armory, instrument rooms, and private offices for the professors of civil and mechanical engineering. On the second floor is a room occupied by the Young Men's Christian Association, the offices and recitation rooms of the professor of mathematics and the professor of physics, the physical laboratory, and the apparatus room. On the third floor are large, well lighted drawing rooms. In the basement are the testing room of the department of civil engineering, and the dynamo laboratory. The testing room contains a Riehlé testing machine of 60,000 pounds capacity, cement testing machine, etc. The dynamo laboratory is provided with solid stone tables, and has working accommodations for twenty students.

OAK HALL.—North of Wingate Hall is Oak Hall, a substantial four-story brick building used as a dormitory, named in honor of Lyndon Oak of Garland, for many years a useful member of the board of trustees. It contains forty-nine study rooms for students, bath rooms, and reading room, is heated by steam, supplied with water, and lighted by electricity. It was remodeled in 1895.

FERNALD HALL.—This building, named in honor of Merritt C. Fernald, Ph. D., president of the State College from 1879 to 1893, is a two-story brick building, situated south of Wingate Hall. It

WINGATE HALL AND FERNALD HALL.

contains twenty rooms devoted to the needs of the department of chemistry. On the first floor are the quantitative and pharmaceutical laboratories, the office and private laboratory for the professor of chemistry and the professor of pharmacy; upon the second floor are the lecture room, the qualitative laboratory, the office and private laboratory of the instructor in qualitative analysis, a store room, and recitation room. Under the roof are arranged the photographic studio, laboratory, and dark rooms. In the basement is an assay laboratory, the laboratory for beginners, and two store rooms.

The department of chemistry is well supplied with apparatus. The greater part of the chemical library, including the current and bound volumes of journals, is kept in this building.

Coburn Hall.—Directly south of Fernald Hall is Coburn Hall, named in honor of Abner Coburn of Skowhegan, the chief benefactor of the university. It is a brick building, three stories in height. On the first floor are located the reading room and the library, the laboratory and recitation room of the professor of agriculture, and the recitation room of the professor of English. On the second floor are the botanical and entomological laboratories, and recitation rooms for the departments of natural history, civics, and modern languages. Over the library is the museum, extending through two stories. The collections are large and constantly increasing. On the third floor is the chapel. In the basement is the President's office.

The Machine Shop.—In the rear of Fernald Hall is the machine shop, a wooden building 125 feet long, and two stories high, containing the foundry, forge shop, carpenter shop, machine shop, and tool room. The shop is thoroughly equipped. Adjoining the shop is a one-story building, 30 by 57 feet, containing the dynamos, motors, and storage battery, which operate the university lighting plant, and serve the seniors for study in their technical work in electrical engineering.

The Experiment Station Building.—South of the machine shop stands a two-story brick building which is devoted to the uses of the Agricultural Experiment Station. In the basement are rooms for the storage and preparation of

samples for analysis, and the boiler room. On the ground floor are the chemists' office, reagent room, the laboratory used in the analysis of foods and feeding stuffs, the nitrogen room, and the laboratory used in the analysis of fertilizers. On the second floor are the general office, the director's private office, the bacteriological laboratory, the journal room, and a storage room for books and pamphlets. The building is heated by steam, supplied with gas and electricity, and thoroughly equipped with apparatus.

The Horticultural Building.—East of the Experiment Station is the horticultural building, consisting of a head-house and three greenhouses. In the head-house are the office of the professor of horticulture, a work room, a seed storage room, a photographing room, the janitor's room, and a room used for storage. The main greenhouse, 20 feet by 100 feet, is devoted to the use of the Experiment Station, and to the instruction of students. A second structure, 20 feet by 80 feet, running parallel to the main greenhouse, is divided, one-half being used for growing plants, and the remainder as a potting and storage room. The third greenhouse is designed for investigations in plant nutrition. In the south end of this house is the conservatory.

The Dairy Building.—The Dairy Building, 50 feet by 42 feet, contains a milk room, a butter room, a cheese room, a cold storage room, a cheese curing room, a lecture room, the office of the professor of animal industry, and a laboratory. It is supplied with all necessary appliances for teaching the most approved methods of handling milk, cream, butter, and cheese. The building is heated with steam and supplied with hot and cold water. Power is furnished by a 6-horse power engine, and by a baby tread horse power.

Other Buildings.—In addition to the buildings already described, there are ten others devoted to various college purposes. Among these are the President's house, four fraternity club houses, a chapter house, and three residences occupied by members of the faculty.

DEPARTMENTS OF INSTRUCTION.

Eh—ENGLISH.

PROFESSOR ESTABROOKE; MR. THAYER; MR. UPTON.

Eh 1. DECLAMATIONS.—In the freshman and sophomore years, the student is required to give seven declamations before his class each year—three in the fall and four in the spring. In the junior year, he is required to give two declamations in the fall and three in the spring. In the senior year, he delivers three orations. PROF. ESTABROOKE.

Eh 2. THEMES.—In his sophomore year, the student writes five themes. each containing from 1,000 to 1,200 words. The themes are historical in character—the results of the student's reading on special epochs of history, or of his study of the lives of historic men. In his junior year, he prepares the same number of themes, each containing from 1,000 to 1,200 words. He also submits a theme for a prize at the close of the year. In the senior year, he writes themes, prepares orations, or takes part in debates. PROF. ESTABROOKE; MR. THAYER; MR. UPTON.

Eh 3. RHETORIC.—The classification of sentences—rhetorical, grammatical; analysis of the sentence with reference to punctuation; exercises in punctuation; diction, with special reference to purity, propriety, and precision of language; clearness, strength, and unity of sentences; extended study of the paragraph; themes—including the narrowing of the subject from general to particulars; construction of outline, etc.; fortnightly

exercises in extemporaneous speaking; frequent exercises in extemporaneous writing; formal essays.

The text-book is Genung's Outlines of Rhetoric. *Five hours a fortnight for sixteen weeks.* PROF. ESTABROOKE; MR. UPTON.

Eh 4. RHETORIC.—Extended study of narration and description, argumentative composition, and persuasion; construction of analytical outlines of selections from Burke, Webster, Macaulay, and others; practice in different kinds of composition; exercises in extemporaneous speaking and writing, as in course 3.

The text-book is A. S. Hill's Principles of Rhetoric. *Five hours a fortnight for twenty weeks.* PROF. ESTABROOKE; MR. UPTON.

Eh 5. ANGLO-SAXON.—Elements of Anglo-Saxon grammar; reading of easy prose and poetry. Constant reference is made to the relation of Anglo-Saxon to modern English.

The text-book is Smith's Grammar. *Five hours a fortnight for twenty weeks.*—PROF. ESTABROOKE.

Eh 6. ENGLISH LITERATURE.—The text-book is Pancoast's Introduction to English Literature, which is supplemented by frequent lectures. Some of the masterpieces of our language, together with the historical and social conditions under which they were produced, are studied in detail. The student prepares frequent essays upon the times and characters studied, makes analyses of the books, and writes critical reviews of the same. The work of the classroom is supplemented by study in the library.

Five hours a week for sixteen weeks. PROF. ESTABROOKE.

Eh 7. ENGLISH LITERATURE.—A continuation of course 4, including a study of the most important American authors of the present century.

Five hours a week for twenty weeks. PROF. ESTABROOKE.

Ml—MODERN LANGUAGES.

MR. GOODELL; MR. THAYER; MR. ELDEN.

Ml 1. FRENCH.—The object of this course is to enable the student to acquire the essentials of the grammar, and the ability to read moderately easy prose.

The text-books are: Grandgent, Short French Grammar; Genin, Le Petit Tailleur Bouton; Erckmann-Chatrian, Le Conscrit de 1813. *Five hours a week for sixteen weeks.* MR. THAYER; MR. ELDEN.

Ml 2. FRENCH.—This course continues the study of grammar and composition in connection with reading.

The text-books are: Mérimée, Colomba; Balzac, Le Curé de Tours; De Vigny, La Canne de Jonc; Hugo, Hernani. *Five hours a week for twenty weeks.* MR. THAYER; MR. ELDEN.

Ml 3. FRENCH.—Selections from French writers of the second half of the 19th century. *Five hours a fortnight for sixteen weeks.* MR. GOODELL.

Ml 4. FRENCH.—Selections from French writers of the first half of the 19th century. *Five hours a fortnight for twenty weeks.* MR. GOODELL.

Ml 5. GERMAN.—An introductory course, covering the elements of the grammar.

The text-books are: Joynes-Meissner, Grammar; Guerber, Märchen und Erzählungen; Storm, Immensee. *Five hours a week for sixteen weeks.* MR. THAYER.

Ml 6. GERMAN.—Riehl, Burg Neideck; Lessing, Minna von Barnhelm. *Five hours a week for twenty weeks.* MR. THAYER.

Ml 7. GERMAN.—Schiller, Wilhelm Tell. *Five hours a week for sixteen weeks.* MR. GOODELL.

Ml 8. GERMAN.—Goethe, Faust. *Five hours a fortnight for twenty weeks.* MR. GOODELL.

Ml 9. SPANISH.—This course is designed to enable the student to read Spanish with only occasional difficulty of vocabulary or idiom. Given in 1896–7, and alternate years. Elective for those who have completed course 2.

The text-books are: Edgren, Spanish Grammar; Knapp, Spanish Readings; Calderon, La Vida es Sueño. *Five hours a fortnight for sixteen weeks.* MR. GOODELL.

Ml 10. SPANISH.—A continuation of course 9. *Five hours a week for twenty weeks.* MR. GOODELL.

Ml 11. ITALIAN.—The aim of this course is a reading knowledge of Italian. Given in 1897–8, and alternate years. Elective for those who have completed course 2.

The text-books are: Grandgent, Italian Grammar; Goldoni, Il Burbero Benefico; Del Testa, L'Oro e l'Orpello. *Five hours a week for sixteen weeks.* MR. GOODELL.

Ml 12. ITALIAN.—A continuation of course 11.

Five hours a fortnight for twenty weeks. MR. GOODELL.

Ml 13. OLD FRENCH.—Paris, Extraits de la Chanson de Roland; Constans, Chrestomathie de l'Ancien Français. *One hour a week, counting as two, for sixteen weeks.* MR. GOODELL.

Ml 14. OLD FRENCH.—A continuation of course 13. *One hour a week, counting as two, for twenty weeks.* MR. GOODELL.

Lt—LATIN.

MR. ELDEN.

Lt 1. LIVY.—History of Rome, books I, II, XXI and XXII.

The text-book is Lincoln's Livy. *Five hours a week for sixteen weeks.*

Lt 2. CICERO.—De Amicitia and De Senectute, selected letters.

The text-book is Kelsey's De Amicitia and De Senectute. *Five hours a week for twenty weeks.*

Lt 3. TACITUS.—Germania, Agricola, Annals.

The text-book is Hopkins' Germania and Agricola of Tacitus. *Five hours a fortnight for sixteen weeks.*

Lt 4. HORACE.—Odes and Epodes.

The text-book is Smith's Odes and Epodes of Horace. *Five hours a fortnight for twenty weeks.*

Lt 5. PLAUTUS AND TERENCE.—Trinummus; Phormio.

The text-book is Nicholson's Phormio of Terence. *Five hours a fortnight for sixteen weeks.*

Lt 6. PLINY THE YOUNGER.—Selected letters.

The text-book is Richard and Bernard's Letters of Pliny. *Five hours a fortnight for twenty weeks.*

Lt 7. Juvenal and Horace.—The text-books are Lindsay's Satires of Juvenal, and Kirkland's Satires and Epistles of Horace. *Five hours a fortnight for sixteen weeks.*

Lt 8. Tacitus and Quintilian.—Annals; Institutes, book X.

The text-books are Tyler's Histories of Tacitus, and Frieze's Institutes of Quintilian. *Five hours a week for twenty weeks.*

Cv—LOGIC AND CIVICS.

Professor Rogers.

Cv 1. General History.—A study of primitive institutions and customs.

The text-book is Tylor's Anthropology. *Five hours a fortnight for twenty weeks.*

Cv 2. English History.—The text-book is Green's Shorter History of the English People. *Five hours a fortnight for sixteen weeks.*

Cv 3. American History.—Lectures, supplemented by topical investigation and study.

Two hours a week for twenty weeks.

Cv 4. The Philosophy of History.—The literature, learning, political and economic conditions of the great historic nations, and the growth of their institutions.

The text-book, Fisher's Outlines of General History, is supplemented by lectures and topical studies. Offered in even years. *Five hours a fortnight for sixteen weeks.*

Cv 5. Psychology.—The functions of the mind, and of the brain and nervous system as organs of the mind.

Five hours a week for ten weeks.

Cv 6. History of Philosophy.—The text-book is Schwegler's History of Philosophy. *Five hours a fortnight for sixteen weeks.*

Cv 7. Logic.—The functions of language as a means of expressing thought, and the principles of deductive and inductive reasoning. The student is given frequent drill in the application of logical principles. Lectures.

Five hours a week for ten weeks.

Cv 8. Political Economy.—Instruction is given by lectures. Topical readings and investigation are required.

Five hours a week for twenty weeks.

Cv 9. Constitutional Law and History.—An outline of Anglo-Saxon institutions, the development of the English Constitution, the growth and political conditions of the American colonies, the Articles of Confederation, the adoption of the Constitution, and the comparative study of the Federal and the State Constitutions from the historical and legal standpoints.

The text-book is Rogers' Our System of Government. *Five hours a week for sixteen weeks.*

Cv 10. Municipal Law.—Lectures on the general principles of contracts, sales, notes, bills, conveyancing, agency, bailments, and insurance.

One hour a week for twenty weeks.

Cv 11. International Law.—The text-book is Woolsey's International Law. Offered in odd years. *Five hours a fortnight for sixteen weeks.*

Cv 12. Library Work.—The aim of this work is to familiarize the student with the literature of history and economics and to teach him to make critical and independent investigation of questions connected with these subjects.

†*Five hours a week for twenty weeks.*

Ms—MATHEMATICS AND ASTRONOMY.

Professor Hart; Professor Fernald; President Harris; Mr. Andrews.

Ms 1. Solid Geometry.—Solid and spherical geometry, including the mensuration of solids, and original demonstrations.

The text-book is Baker's Solid Geometry. *Five hours a week for eight weeks.* Prof. Hart; President Harris; Mr. Andrews.

Ms 2. ALGEBRA.—Review of quadratic equations and of the binomial theorem with integral, fractional, and negative exponents; variation; progression; convergence and divergence of series.

The text-book is Wells' College Algebra. *Five hours a week for eight weeks.* PROF. HART; PRESIDENT HARRIS; MR. ANDREWS.

Ms 3. ALGEBRA.—Undetermined coefficients; partial fractions; permutations and combinations; probability; logarithms; exponential and logarithmic series; computation of logarithms; the theory of equations.

The text-book is Wells' College Algebra. *Five hours a week for eight weeks.* PROF. HART; PROF. FERNALD; MR. ANDREWS.

Ms 4. TRIGONOMETRY.—Plane and spherical trigonometry.

The text-book is Bowser's Elements of Trigonometry. *Five hours a week for twelve weeks.* PROF. HART; PROF. FERNALD; MR. ANDREWS.

Ms 5. ANALYTICAL GEOMETRY.—A brief study of the point, right line, and conic sections.

The text-book is Briggs' Analytic Geometry. *Five hours a fortnight for sixteen weeks.* MR. ANDREWS.

Ms 6. ANALYTICAL GEOMETRY.—A more extended course. The straight line and conic sections, including polar and oblique coordinates; equation of the second degree; introduction to solid analytical geometry.

The text-book is Nichols' Analytic Geometry. *Five hours a week for sixteen weeks.* PROF. HART; PROF. FERNALD.

Ms 7. CALCULUS.—Differentiation; integration by fundamental formulas; integration regarded as a summation; definite integrals.

The text-book is Osborne's Differential and Integral Calculus. *Five hours a week for twenty weeks.* PROF. HART; PROF. FERNALD; MR. ANDREWS.

Ms 8. CALCULUS.—Applications of differential calculus; applications of integral calculus.

The text-book is Osborne's Differential and Integral Calculus. *Five hours a fortnight for sixteen weeks.* PROF. HART; PROF. FERNALD; MR. ANDREWS.

MS 9. DESCRIPTIVE ASTRONOMY.—The text-book is supplemented by informal lectures, and illustrated by lantern slides, the Trouvelot drawings of celestial objects, and observations with an equatorial telescope.

The text-book is Young's Elements of Astronomy. *Five hours a fortnight for twenty weeks.* PROF. HART.

MS 10. PRACTICAL ASTRONOMY.—Problems in the conversion of time, the determination of terrestrial latitudes and longitudes, and the establishment of meridian lines. The instruments used are the sextant, and artificial horizon, a portable chronometer, theodolite, and vertical circle.

Five hours a fortnight for twenty weeks. PROF. HART.

MS 11. ADVANCED ALGEBRA.—Determinants and the solution of higher equations.

Five hours a fortnight for twenty weeks. PROF. HART.

MS 12. ADVANCED INTEGRAL CALCULUS.—A course based upon Byerly's Integral Calculus. Given in the fall term of odd years.

Five hours a fortnight for sixteen weeks. PROF. HART.

MS 13. ADVANCED INTEGRAL CALCULUS. A continuation of course 12. Given in the spring term of even years.

Five hours a fortnight for twenty weeks. PROF. HART.

MS 14. THEORY OF EQUATIONS.—Given in the fall term of even years.

The text-book is Todhunter's Theory of Equations. *Five hours a fortnight for sixteen weeks.* PROF. HART.

MS 15. DIFFERENTIAL EQUATIONS.—Given in the spring term of even years.

Lectures with problems from Osborne's Examples of Differential Equations. *Five hours a fortnight for twenty weeks.* PROF. HART.

Ms 16. Practical Astronomy.—The theory and use of the sextant, universal instrument, transit, and zenith telescope. Given in 1897-8 and alternate years.

Five hours a fortnight for sixteen weeks. Prof. Hart.

Ms 17. Practical Astronomy.—A continuation of course 16. Given in 1897-8 and alternate years.

Five hours a week for twenty weeks. Prof. Hart.

Ps—PHYSICS.

Professor Stevens; Mr. Weston; Mr. Brastow.

Ps 1. General Physics.—Recitations and problems; experiments before the class, and lectures on modern physical theories and subjects not discussed in the text-book.

The text-book is Carhart's University Physics. *Five hours a week for sixteen weeks.* Prof. Stevens; Mr. Weston.

Ps 2. General Physics.—A continuation of course 1.

The text-book is Carhart's University Physics. *Five hours a fortnight for twenty weeks.* Prof. Stevens; Mr. Weston.

Ps 3. Elementary Physics.—A non-mathematical course, covering the ground of course 1. The recitations are supplemented by lectures and experimental demonstrations.

The text-book is Dolbear's Natural Philosophy. *Five hours a fortnight for sixteen weeks.* Mr. Weston.

Ps 4. Elementary Physics.—A continuation of course 3.

The text-book is Dolbear's Natural Philosophy. *Four hours a fortnight for twenty weeks.* Mr. Weston.

Ps 5. Laboratory Physics.—The subjects usually included in an under-graduate course. Especial attention is given to the reduction of observations, and the tabulation of results.

Nichols' Laboratory Manual is made the basis of most of the experiments. †*Five hours a week for twenty weeks.* Prof. Stevens; Mr. Weston; Mr. Brastow.

Ps 6. Laboratory Physics.—A short course for students in the short course in pharmacy.

†*Two hours a fortnight for twenty weeks.* Mr. Brastow.

Ps 7. Advanced Optics.—Lectures in continuation of course 1, based chiefly upon Preston's Light.

Five hours a fortnight for twenty weeks. Prof. Stevens.

Ps 8. Mathematical Physics.—One course in mathematical physics is offered each year. For this year the text-book is Merriman's Least Squares.

Five hours a fortnight for sixteen weeks. Prof. Stevens.

Ps 9. Laboratory Physics.—General laboratory work in continuation of course 5.

†*Five hours a week for sixteen weeks.* Prof. Stevens.

Ps 10. Laboratory Physics.—Advanced laboratory work in optics, in continuation of course 9.

†*Five hours a week for twenty weeks.* Prof. Stevens.

Ps 11. Electrical Measurements and Testing.—The measurement of resistance, potential, capacity, and current; the testing of galvanometers, etc. The charge for this course is $2.50.

†*Four hours a week for sixteen weeks.* Prof. Stevens; Mr. Weston.

Dr—DRAWING.

Mr. Boardman.

Dr 1. Drawing.—Free-hand work in perspective and model drawing; lettering.

†*Five hours a week for sixteen weeks.*

Dr 2. Mathematical Drawing.—The plotting of functions, and the solution of equations by the graphic method.

†*Three hours a week for ten weeks.*

Dr 3. Mechanical Drawing.—Instruction and practice in the care and use of drawing instruments, in the drawing of geometrical problems, and in the use of water colors. Especial attention is given to accuracy and neatness.

†*Five hours a week for twenty weeks.*

Dr 4. MECHANICAL DRAWING.—Problems in shades and shadows, and dimension drawing.

The text-book is Faunce's Mechanical Drawing. † *Seven hours a week for sixteen weeks.*

Dr 5. GENERAL DRAWING.—Isometric and cabinet projections, perspective, and the preparation of working drawings. Lectures and exercises in the drawing room.

† *Ten hours a week for six weeks.*

Dr 6. DESCRIPTIVE GEOMETRY.—Elementary problems; tangents, intersection of planes, cylinders, cones, spheres, etc. The time is divided equally between the recitation room and drawing room.

The text-book is Church's Descriptive Geometry. *Five hours a fortnight for sixteen weeks.*

Dr 7. DESCRIPTIVE GEOMETRY.—A continuation of course 6. *Three hours a fortnight for twenty weeks.*

Dr 8. STEREOTOMY.—The application of the methods of descriptive geometry to the preparation of drawings for retaining walls, bridge abutments, piers, arches, etc.

† *Ten hours a week for six weeks.*

Ch.—CHEMISTRY.

PROFESSOR AUBERT; DR. ALLEMAN; MR. ROGERS.

Ch 1. GENERAL CHEMISTRY.—Recitations and lectures on the general principles of chemistry, illustrated by charts, experiments, etc.

The text-books are Storer and Lindsay's Manual of Chemistry, and Bardwell's Laboratory Experiments. *Five hours a fortnight for sixteen weeks.* DR. ALLEMAN.

Ch 2. GENERAL CHEMISTRY.—A continuation of course 1.

The text-book is Storer and Lindsay's Manual of Chemistry. *Five hours a week for twenty weeks.* DR. ALLEMAN.

Ch 3. LABORATORY CHEMISTRY.—The preparation of the more common elements and inorganic compounds; a study of their properties; elementary analysis.

The text-book is Wardwell's Laboratory Experiments. †*Two hours a week for sixteen weeks.* MR. ROGERS.

Ch 4. LABORATORY CHEMISTRY.—A continuation of course 3. †*Two hours a week for twenty weeks.* MR. ROGERS.

Ch 5. CHEMICAL THEORY.—The text-book is Joannis, Cours Elementaire de Chimie. *Five hours a fortnight for sixteen weeks.* PROF. AUBERT.

Ch 6. INORGANIC CHEMISTRY.—The non-metallic elements.
The text-book is Joannis, Cours Elementaire de Chimie. *Five hours a fortnight for sixteen weeks.* PROF. AUBERT.

Ch 7. INORGANIC CHEMISTRY.—The metals.
The text-book is Joannis, Cours Elementaire de Chimie. *Five hours a fortnight for sixteen weeks.* PROF. AUBERT.

Ch 8. ORGANIC CHEMISTRY.—Lectures and recitations, illustrated by specimens; a laboratory course in the preparation of organic compounds.
The text-book is Joannis, Cours Elementaire de Chimie. *Five hours a fortnight for twenty weeks.* PROF. AUBERT.

Ch 9. ORGANIC CHEMISTRY.—A short course setting forth the properties of organic compounds, the general methods of preparing them, and special methods for preparing some of the most important.
The text-book is Turpin's Organic Chemistry. *Five hours a fortnight for sixteen weeks.* DR. ALLEMAN.

Ch 10. CHEMICAL READING.—Study and translations of foreign works.
One hour a week for sixteen weeks. PROF. AUBERT.

Ch 11. LABORATORY PROCESSES.—Laboratory methods and processes used in the arts.
Five hours a fortnight for sixteen weeks. PROF. AUBERT.

Ch 12. ORGANIC CHEMICALS.—The more common forms of apparatus and processes used in the preparation and synthesis of organic substances.
Cohen's Practical Organic Chemistry is used for reference.
†*Twenty-two hours a week for four weeks.* PROF. AUBERT.

Ch 13. MINERALOGY.—Determinative mineralogy and blowpipe analysis.

The text-books are Dana's Manual of Mineralogy and Petrography, and Crosby's Tables for Determination of Minerals. †*Two hours a week for twenty weeks.* DR. ALLEMAN.

Ch 14. QUALITATIVE ANALYSIS.—The determination and separation of acids and bases in simple and complex substances; and the writing of the reactions.

The text-book is Medicus' Qualitative Analysis. *The time varies; it is stated in the tables.* DR. ALLEMAN.

Ch 15. QUALITATIVE ANALYSIS.—The text-book is Medicus' Qualitative Analysis. *The time varies; it is stated in the tables.* DR. ALLEMAN.

Ch 16. QUANTITATIVE ANALYSIS.—Gravimetric determinations.

The text-book is Appleton's Quantitative Analysis. *The time varies; it is stated in the tables.* PROF. AUBERT.

Ch 17. QUANTITATIVE ANALYSIS.—A continuation of course 16.

The text-book is Talbot's Quantitative Analysis. *The time varies; it is stated in the tables.* PROF. AUBERT.

Ch 18. QUANTITATIVE ANALYSIS.—Analysis of complex alloys, minerals, etc.

The text-book is Cowles and Coleman's Quantitative Analysis. †*Ten hours a week for sixteen weeks.* PROF. AUBERT.

Ch 19. VOLUMETRIC ANALYSIS AND ASSAYING.—Acidimetry, alkalimetry, oxydimetry; gold and silver assaying.

The text-books are Cowles and Coleman's Quantitative Analysis, and Clark's Assay Notes. *The time varies; it is stated in the tables.* PROF. AUBERT.

Ch 20. AGRICULTURAL ANALYSIS.—The analysis of fodders, fertilizers, milk, and other agricultural products. The methods are those recommended by the Association of Official Agricultural Chemists.

The time varies; it is stated in the tables. PROF. AUBERT.

Ch 21. Toxicology and Biological Analysis.—The determination of the commoner poisons; the analysis of urine and other animal secretions and products, normal and pathological.

The text-book is Witthaus' Urinalysis. *The time varies, it is stated in the tables.* Prof. Aubert.

Ch 22. Thesis Work.—The thesis must embody the results of original work in analysis, or research.

† *Twenty-two hours a week for sixteen weeks.*

Nh—NATURAL HISTORY.

Professor Harvey.

Nh 1. Cryptogamic Botany.—A detailed study of about thirty type forms. Special attention is given to useful and injurious fungi, to fungicides and spraying apparatus. Students collect specimens and prepare a herbarium.

The facilities are a convenient laboratory, a good working library, a herbarium of five thousand species, a set of Brendel models, charts, and a rich local cryptogamic flora.

Five hours a fortnight for sixteen weeks.

Nh 2. Laboratory Botany.—The use of the microscope, micrometers, camera lucida and microtome; the preparation of slides; the analysis, description, and classification of cyptogams, and their preparation for the herbarium.

† *Two hours a week for sixteen weeks.*

Nh 3. Advanced Physiology.—Lectures on the anatomy, physiology, hygiene and pathology of the human body, illustrated by a skeleton, manikin, models of the human larynx, ear, eye, and brain, charts, microscopic slides, fresh, dried, and alcoholic material.

Five hours a fortnight for twenty weeks.

Nh 4. Laboratory Physiology.—Examination of skeleton, manikin, charts, models, microscopic slides, and the dissection of lower animals.

† *Two hours a week for twenty weeks.*

Nh 5. Invertebrate Zoology.—The detailed study of type forms of all the branches. The student uses the compound

microscope, makes dissections and careful drawings, and classifies the forms studied. Fresh, dried, and alcoholic materials, charts, models, and the working library of reference books are in constant use.

Five hours a fortnight for sixteen weeks.

Nh 6. LABORATORY ZOOLOGY.—A continuation of course 5.

† *Five hours a week for sixteen weeks.*

Nh 7. HELMINTHOLOGY.—A course in zoology with especial attention to the parasites of man and the domestic animals.

† *Four hours a week for twenty weeks.*

Nh 8. COMPARATIVE VERTEBRATE ZOOLOGY.—A comparative study of type forms of vertebrate animals. Special attention is given to the zoology of the domestic animals. The department is provided with a set of Auzoux's models and a good working collection of type forms.

The text-book is Packard's Zoology. *Seven hours a fortnight for sixteen weeks.*

Nh 9. LABORATORY ZOOLOGY.—Museum work; study of charts, and models; dissections of a fish, frog, turtle, bird, and rat; methods of preparing specimens for collections.

† *Four hours a week for twenty weeks.*

Nh 10. ENTOMOLOGY.—The anatomy, physiology, classification, and economic importance of insects. The department has for illustration a collection of insects, charts, models, and an abundant insect fauna.

The text-books are Smith's Economic Entomology, and Comstock's Entomology. *Five hours a fortnight for twenty weeks.*

Nh 11. GEOLOGY.—Especial attention is given to the origin and formation of soils, to the method of conducting a geological survey, and to the geology of Maine. The course is illustrated by mineral, rock, and fossil specimens, and by charts, maps, and diagrams.

The text-book is Scott's Introduction to Geology. *Five hours a fortnight for sixteen weeks.*

Nh 12. HUMAN ANATOMY.—A detailed study of the human skeleton. Examination of a manikin showing details of the

respiratory, digestive, circulatory, reproductive, depurgatory, nervous, and muscular systems, and of the organs of the special senses.

The text-book is Gray's Anatomy. *Five hours a fortnight for twenty weeks.*

Ag—AGRICULTURE.

PROFESSOR WOODS; PROFESSOR GOWELL; DR. RUSSELL; MR. MERRILL.

Ag 1. BIOLOGICAL CHEMISTRY.—Lectures and recitations on the chemical changes in nature important to agriculture, the composition of air, soils, natural waters, and plants, the sources and assimilation of plant food, and the chemical processes and methods of investigation by which these subjects are studied.

The text-book is Johnson's How Crops Grow. *Five hours a fortnight for sixteen weeks.* MR. MERRILL.

Ag 2. BIOLOGICAL CHEMISTRY.—A continuation of course 1. Lectures and recitations in physiological chemistry, including the composition of the animal body, the composition of food materials, the chemical changes involved in the digestion and assimilation of food; also the chemistry of milk and dairy products, and the chemical processes and methods of investigation by which these subjects are studied.

The text-book is Arthur's Chimie Physiologique. *Five hours a week for twenty weeks.* MR. MERRILL.

Ag 3. AGRICULTURAL CHEMISTRY.—Lectures on the origin, composition, preparation and use of commercial fertilizers, the supply, composition, care and use of farm manures, and the general considerations which pertain to the maintenance of soil fertility.

Five hours a fortnight for eight weeks. PROF. WOODS.

Ag 4. AGRICULTURAL PHYSICS.—Lectures on the relation of soils to heat and moisture, the mechanical condition of soils best suited to plant growth, and the objects to be gained by cultivation.

Five hours a fortnight for ten weeks. PROF. WOODS.

Ag 5. AGRICULTURAL ENGINEERING.—Lectures on farm drainage, irrigation, water supply for stock and household, farm implements and machinery, handling crops, and construction of farm buildings, sites, etc.

Five hours a fortnight for ten weeks. PROF. GOWELL.

Ag 6. STOCK FEEDING.—Lectures on the production of cattle foods and their composition, on formulating rations for milk and meat production, and application of the lectures to the animals in the herd.

The text-books are Armsby's Cattle Feeding, Stewart's Feeding Animals, and experiment station reports. *Five hours a fortnight for eight weeks.* PROF. GOWELL.

Ag 7. DAIRYING.—Lectures upon the formation and composition of milk; sources of infection; bacteria and their relation to dairying; ferments and their effects.

The text-books are Grotenfelt and Woll's Principles of Modern Dairy Practice, Stewart's Dairyman's Manual, Flint's Milch Cows and Dairy Farming, and Arnold's American Dairying. *Five hours a week for six weeks.* PROF. GOWELL.

Ag 8. STOCK BREEDING.—Lectures upon animal reproduction, the principles of breeding, and the means of improvement and development. Practice is given in judging animals by a scale of points.

The text-books are Miles's Cattle Breeding, Saunder's Horse Breeding, and Curtis' Breeds. *Five hours a week for eight weeks.* PROF. GOWELL.

Ag 9. POULTRY INDUSTRY.—Lectures, with practice in handling poultry, and judging by a scale of points; in breeding; in hatching by natural and artificial processes; and in the use of machinery. Caponizing, and the construction and arrangement of buildings receive careful attention.

Five hours a week for six weeks. PROF. GOWELL.

Ag 10. DAIRY PRACTICE.—The treatment and handling of milk and cream; milk testing for fat and other solids; aeration, pasteurization and sterilization of milk and cream; the application of acid tests and ferments to butter and cheese making; operating and caring for the boiler, engine, gravity creamers,

centrifugal separators, churns, workers, vats, presses, and the making, curing and judging of butter and cheese, together with the business management of factories and creameries. Each student must provide himself with two suits of clothes made of white drilling.

† *Seven hours a week for fourteen weeks.* PROF. GOWELL.

Ag 11. VETERINARY SCIENCE.—Lectures, demonstrations and clinics, illustrated by models, natural preparations, and living animals.

Five hours a fortnight for twenty weeks. DR. RUSSELL.

Ag 12. DISSECTING.—A brief course intended to make the student familiar with the location and appearance of the more important organs of the animal body.

† *Seven hours a week for six weeks.* DR. RUSSELL.

Ag 13. BACTERIOLOGY.—Methods of cultivating bacteria, the morphological and biological character of bacteria and fungi, particularly of those relating to disease, and of those of importance from an economic standpoint, the methods of making biological examinations of air, water, etc. During the time given to laboratory work, exercises in this course will be held every day, and the number of exercises will be correspondingly decreased. The instructor will arrange for an exchange of time with other laboratory courses.

† *Five hours a week for ten weeks.* DR. RUSSELL.

Ag 14. ANIMAL HISTOLOGY.—Dissecting and the preparation of the most important tissues and organs, accompanied with lectures and recitations.

† *Ten hours a week for ten weeks.* DR. RUSSELL.

Ag 15. LABORATORY BACTERIOLOGY.—An advanced course.

†. *Ten hours a week for ten weeks.* DR. RUSSELL.

Ht—HORTICULTURE.

PROFESSOR MUNSON.

Ht 1. GENERAL BOTANY.—The structure and functions of the organs of plants; the development and relationship of the leading groups. Lectures, supplemented by laboratory work in the greenhouses and the field.

Gray's School and Field Book of Botany is used for reference.
†*Five hours a week for twenty weeks.*

Ht 2. POMOLOGY.—The economic importance, methods of culture, and marketing of fruits; the principles and practice of spraying plants.
Five hours a fortnight for ten weeks.

Ht 3. OLERICULTURE, OR VEGETABLE GARDENING.—The history and uses of leading garden vegetables, with directions for their culture in the field and under glass. Lectures and practical demonstrations.
Five hours a fortnight for ten weeks.

Ht 4. PLANT VARIATION—A discussion of the underlying principles of horticulture. The origin and distribution of cultivated plants; their variation as affected by soil, climate, and cultivation; a systematic study of plant breeding, including the methods and effects of crossing, the principles of selection, and the influence of heredity. Students in this course must have taken course 1.
Five hours a fortnight for eight weeks.

Ht 5. LANDSCAPE GARDENING.—The principles of landscape art and their application.
Five hours a fortnight for eight weeks.

Ht 6. LABORATORY HORTICULTURE.—The propagation and culture of plants, the construction and management of forcing structures, and the making of plans for rural improvements.
†*Four hours a week for twenty weeks.*

Ht 7. LABORATORY HORTICULTURE.—A continuation of course 6.
†*Five hours a week for sixteen weeks.*

Ht 8. HISTOLOGY OF PLANTS.—A description and comparison of tissues, with investigation of the minute anatomy of vegetable organs, and studies in the phenomena of cell development and fertilization.
Bastian's College Botany is used for reference. † *Five hours a week for ten weeks.*

Pm—PHARMACY.

Assistant Professor Jackman.

Pm 1. Physical and Official Pharmacy.—The history of pharmacopœias, dispensatories, etc.; weights and measures, specific gravity, the pharmaceutical uses of heat, distillation, solution, filtration, etc.; official preparations; pharmaceutical problems, involving percentage solutions, parts by weight, and measure, chemical principles and equations, actual pharmacy operations.

The text-book is Remington's Practice of Pharmacy. *Five hours a week for sixteen weeks.*

Pm 2. Inorganic, Organic, and Extemporaneous Pharmacy.—The elements, the official salts, and inorganic acids, their preparation and classification. Organic compounds, their classification, official preparations; official drugs of the Materia Medica classified according to their proximate principles, the preparations of these drugs, etc., animal preparations. Extemporaneous pharmacy; the principles of dispensing, store management, etc.

The text-book is Remington's Practice of Pharmacy, *Five hours a week for sixteen weeks.*

Pm 3. Laboratory Pharmacy.—Official preparations and tests. The operations of manufacturing pharmacy, including the preparation of granular and scale salts, infusions, syrups, tinctures, etc. Official tests of chemicals, drugs, and preparations, for identity, strength, adulteration, etc.

The text-book is Remington's Practice of Pharmacy, or the U. S. Pharmacopœia. † *Ten hours a week for sixteen weeks.*

Pm 4. Pharmacopœia and Prescriptions.—A complete review of the pharmacopœia, with especial reference to the chemical and pharmaceutical principles involved in processes and preparations; critical examination of prescriptions from actual files, with reference to inelegance, physiological, pharmaceutical, and chemical incompatibility; doses; methods and order of compounding, etc.

The text-book is Remington's Practice of Pharmacy. *Three hours a week for twenty weeks.*

WINGATE HALL.

Pm 5. Inorganic Pharmacognosy.—Official and common names; practical exercises in the identification of specimens.

The text-book is the Era Key to the U. S. Pharmacopœia. *Five hours a fortnight for sixteen weeks.*

Pm 6. Organic Pharmacognosy. — Official and common names, practical exercises.

The text-book is the Era Key to the U. S. Pharmacopœia. *Four hours a week for twenty weeks.*

Pm 7. Materia Medica.—Chemicals and drugs, their nature, uses, classification, therapeutic action, and doses; poisons, and antidotes.

The text-book is Potter's Materia Medica. *Three hours a week for sixteen weeks.*

Pm 8. Thesis Work.—The thesis must embody the results of original work in analysis, or research.

† *Ten hours a week for twenty weeks.*

Ce—CIVIL ENGINEERING.

Professor Hamlin; Associate Professor Grover; Mr. Cosmey.

Ce 1. Plane Surveying.—Recitations on the general principles of land surveying, the laying out of land, the dividing of land, surveying of public lands, direct leveling, and the variation of the magnetic needle.

The text-book is Raymond's Surveying. *Five hours a fortnight for twenty weeks.* Prof. Grover.

Ce 2. Field Work in Surveying.—The uses of the chain, compass, transit, and level. Instruments are adjusted, original surveys made, and old lines retraced. Deeds are examined, and descriptions of property traced back in the Penobscot County registry of deeds. Plats are prepared of the surveys made in the field.

† *Four hours a week for twenty weeks.* Prof. Grover; Mr. Cosmey.

Ce 3. Railroad Engineering.—Lectures and recitations on the theory of railroad curves, switches, turnouts and slope

stakes, the calculation of earthworks, and the resistance to trains offered by grades and curves, and the theory of economic location.

The text-book is Searles's Field Engineering. *Five hours a fortnight for sixteen weeks.* PROF. GROVER.

Ce 4. RAILROAD WORK.—The location and detailed survey of a railroad several miles long. The curves are laid out, levels taken, and all the necessary measurements made to enable the student to compute the excavations and embankments and estimate the cost of construction.

† *Five hours a week for sixteen weeks.* PROF. GROVER; MR. COSMEY.

Ce 5. HIGHWAY ENGINEERING.—The location, construction, and improvement of country roads under different conditions of soil, climate, and traffic.

One hour a week for sixteen weeks. PROF. GROVER.

Ce 6. MECHANICS.—The principles of statics; the algebraic and graphic solution of statical problems, including simple trusses; exercises in finding the moment of inertia, center of gravity, the shearing force and bending moment.

The text-book is Church's Mechanics of Engineering. *Five hours a week for sixteen weeks.* PROF. GROVER.

Ce 7. MECHANICS.—A continuation of course 6, including the principles of dynamics.

The text-book is Church's Mechanics of Engineering. *Five hours a week for twenty weeks.* PROF. GROVER.

Ce 8. SANITARY ENGINEERING.—Lectures on land drainage, drainage of houses and towns, plumbing of houses, sewerage of towns and cities, and the ventilation of houses.

Five hours a fortnight for sixteen weeks. PROF. HAMLIN.

Ce 9. HIGHER SURVEYING.—The plane table, the solar compass as applied to the survey of public lands, stadia measurements, topographical surveying, the elements of geodesy, the measurement of base lines, calculation of a system of triangulation.

† *Ten hours a week for eight weeks.* PROF. HAMLIN; MR. COSMEY.

Ce 10. HYDRAULICS.—The weight, pressure, and motion of water; the flow of water through orifices and pipes; weir gauging; the flow of water in open channels, mains, and distribution pipes; distribution systems; the construction of water works for towns and cities.

The text-books are Fanning's Hydraulics, and Church's Mechanics of Engineering. *Five hours a fortnight for sixteen weeks.* PROF. HAMLIN.

Ce 11. HYDRAULICS FIELD WORK.—The measurement of the flow of rivers is illustrated by the application of the current meter and the various forms of floats to the Penobscot River or some of its large branches. The department is well supplied with apparatus.

† *Seven hours a week for eight weeks.* PROF. HAMLIN: MR. COSMEY.

Ce 12. STRUCTURES.—A detailed study of the properties of materials used in engineering structures; their resistance to bending, breaking, extension and compression, under the various conditions of practice; the theory of stresses in framed structures; the usual systems of loading; and the principles of designing.

The text-books are Merriman's Mechanics of Materials, Johnson's Framed Structures, and Merriman's Roofs and Bridges, Part III. *Five hours a week for sixteen weeks.* PROF. HAMLIN.

Ce 13. STRUCTURES.—A continuation of course 12; including the study of problems in connection with masonry structures; natural and artificial foundations; the stability of dams and retaining walls; the designing of bridge piers and abutments; the theory of the masonry arch.

The text-books are Merriman's Mechanics of Materials, Johnson's Framed Structures, Merriman's Roofs and Bridges, Part III, and Baker's Masonry Construction.

Five hours a week for twenty weeks. PROF. HAMLIN.

Ce 14. DESIGNING.—Designs for several of the common types of wooden and steel structures, and preparation of drawings for the shop.

† *Seven hours a week for eight weeks.* PROF. HAMLIN; MR. COSMEY.

Ce 15. DESIGNING AND THESIS WORK.—A continuation of course 14 and the preparation of a thesis.

† *Twelve hours a week for twenty weeks.* PROF. HAMLIN; MR. COSMEY.

Me—MECHANICAL ENGINEERING.

PROFESSOR FLINT; MR. WALKER; MR. STEWARD; MR. GOODRIDGE.

Me 1. CARPENTRY.—The care and sharpening of tools, the squaring of stock, and taking work out of wind; practice in making different joints in soft and hard wood; wood turning. The charge for material is $5.00 a term.

†*Seven hours a week for sixteen weeks.* MR. WALKER.

Me 2. FORGE WORK.—Drawing and upsetting; the welding of straight pieces of various sizes, the making of rings, and chain links, the welding of eye bolts and bolt heads, etc.; the making of a steel punch, cold chisels, and a set of lathe tools, for use in the machine shop; foundry work. The student must furnish a forging hammer, calipers, and scale, at a cost of $2.50. The charge for materials is $5.00 a term.

†*Five hours a week for twenty weeks.* MR. WALKER; MR. GOODRIDGE.

Me 3. KINEMATICS.—Methods of transmitting and transforming motion, illustrated by the solution of practical problems; the construction of cams, lobed wheels, and gear teeth, cycloidal, and involute gears.

The text-book is McCord's Kinematics. †*Four hours a week for twenty weeks.* MR. WALKER.

Me 4. MACHINE WORK.—Exercises in filing and chipping; lathe work, drilling, boring and threading in the lathe; making cut gears, machinist taps, and finished bolts; exercises on the planer and shaper. Each student provides himself with center gauge, steel scale, and files, at a cost of $2.50. The charge for materials is $5.00 a term. Students will be given credit for work in commercial shops on presentation of satisfactory proof.

The time devoted to machine work varies. MR. STEWARD.

Me 5. ANALYTIC MECHANICS.—Composition and resolution of forces, center of gravity, friction, virtual velocities, elementary machines, work, energy, moment of inertia.

The text-book is Bowser's Analytic Mechanics. *Five hours a week for sixteen weeks.* MR. WALKER.

Me 6. ANALYTIC MECHANICS.—A continuation of course 5.

The text-book is Bowser's Analytic Mechanics. *Five hours a week for eight weeks.* MR. WALKER.

Me 7. APPLIED MECHANICS.—Stress, its resultants and centers; moments, moments of inertia; strength and deflection of beams; analysis of framed structures for internal stresses under uniform and concentrated loads; graphic statics.

The text-book is Rankine's Applied Mechanics. *Five hours a week for twelve weeks.* MR. WALKER.

Me 8. APPLIED MECHANICS.—A continuation of course 7.

Lectures. *Five hours a fortnight for sixteen weeks.* MR. WALKER.

Me 9. MACHINE DESIGN.—Rules and formulas are applied to machines of standard manufacture for comparison. The student designs a speed lathe, and makes the working designs.

The text-book is Benjamin's Machine Design. *Seven hours a fortnight for twenty weeks.* PROF. FLINT.

Me 10. HYDRO-MECHANICS.—The behavior of liquids in motion and under pressure, flowing through pipes and in open channels, with problems.

The text-book is Bowser's Hydro-Mechanics. *Five hours a fortnight for sixteen weeks.* PROF. FLINT.

Me. 11. HEAT AND STEAM.—The characteristics of steam and its behavior in pipes, boilers, and particularly in the cylinders of engines; problems involving the properties of saturated steam; the calculation of steam pipes and safety valves; the design of a boiler suited to run an engine under given conditions, and the detail drawings.

The text-book is Benjamin's Heat and Steam. *Five hours a fortnight for sixteen weeks.* PROF. FLINT.

Me 12. STEAM BOILER DESIGN.—Drawings of the more important parts of the design worked out in course 11.

†*Twelve hours a week for sixteen weeks.* PROF. FLINT.

Me 13. TESTING.—Tests of steam gauges, boilers, etc.; tests of different metals under tension and compression.

Five hours a fortnight for twenty weeks. PROF. FLINT.

Me 14. STEAM ENGINE.—The steam engine as a source of power; the design, proportions and working of engine cylinders, steam pipes, and ports; engine valves, eccentrics, adjustable eccentrics; the locomotive link motion with its connections; numerous problems on the slide valve and link motion; the calculation of details of an engine.

The text-book is Whitham's Steam Engine Design. *Seven hours a fortnight for twenty weeks.* PROF. FLINT.

Me 15. STEAM ENGINE DESIGN.—Drawings of the parts worked out in course 14; the setting of valves by means of the indicator; the calculation of horse power; the consumption of water and coal, etc.

† *Fifteen hours a week for ten weeks.* PROF. FLINT.

Me 16. THESIS WORK.—The design of a piece of machinery.

† *Fifteen hours a week for ten weeks.* PROF. FLINT.

Ee—ELECTRICAL ENGINEERING.

PROFESSOR STEVENS; MR. LANPHEAR.

Ee 1. ELECTRICITY AND MAGNETISM.—This course continues the subject of electricity and magnetism begun in physics. Lectures are given, and laboratory methods and results are discussed with the class.

The text-book is Silvanus Thompson's Electricity and Magnetism. *Two hours a week for sixteen weeks.* MR. LANPHEAR.

Ee 2. ELECTRICITY AND MAGNETISM.—A continuation of course 1; the dynamo and apparatus connected with its operation.

The text-book is Hawkins and Wallis' The Dynamo. *Three hours a week for twenty weeks.* MR. LANPHEAR.

Ee 3. ELECTRICAL MACHINERY.—Lectures on the theory and construction of dynamos, motors, etc.

Five hours a fortnight for sixteen weeks. MR. LANPHEAR.

Ee 4. Electrical Engineering.—The designing, construction, and operating of alternating current machinery and the use of direct and alternating current machinery in lighting, and the transmission of power.

Five hours a week for ten weeks. Mr. Lanphear.

Ee 5. Electrical Design.—This course is similar to the course in machine design given to students in mechanical engineering. Each student is required to make the computations and complete drawings for a dynamo.

† *Seven hours a week for sixteen weeks.* Mr. Lanphear.

Ee 6. Electrical Design.—The problems involved in designing alternating current machinery, in the electrical transmission of power, and in the distribution of electric light.

† *Ten hours a week for ten weeks.* Mr. Lanphear.

Ee 7. Laboratory Electricity.—Tests of electrical instruments; experimental work with dynamos, motors, etc.; tests of efficiency; photometric tests of electric lamps; the practical management of the electric light plant. The charge for this course is $2.50.

† *Five hours a week for sixteen weeks.* Mr. Lanphear.

Ee 8. Theoretical Electricity.—Lectures on the mathematical theory of electrical instruments. This course will be varied from year to year.

Five hours a fortnight for ten weeks. Prof. Stevens.

Ee 9. Power Stations.—The selection and arrangement of power house machinery; methods of operation. Lectures.

Five hours a fortnight for sixteen weeks. Mr. Lanphear.

Ee 10. Shop Work.—The winding of armatures and magnets, the building up of transformer cores and the winding of transformers and impedance coils, the construction of condensers for alternating current circuits, construction of rheostats and bridges, tangent and ballistic galvanometers, ammeters and other measuring instruments, a standard cell, a secondary battery, the preparation of fuse wire and fuses, the construction of automatic switches and arc lamps. The charge for this course is $5.00.

†*Five hours a week for sixteen weeks.* Mr. Lanphear.

Ee 11. THESIS WORK.—A continuation of course 7. The student devotes a large part of his time to some special investigation selected as the subject for his graduating thesis. The charge for this course is $2.50.

†*Fifteen hours a week for ten weeks.* MR. LANPHEAR.

Mt—MILITARY SCIENCE AND TACTICS.

LIEUTENANT ROYDEN.

Each man student is required to take military drill, unless physically unfit, and to attend recitations in military science.

The drill, course 1, occupies the first thirteen weeks of the fall term, and the last thirteen weeks of the spring term, one hour a day, and three days in the week, counting as one hour and a half in reckoning the student's total time. The remaining three weeks in the fall term and seven weeks in the spring term, are given: by the senior class, to recitations in military science, course 4, three recitations a fortnight; by the junior class, to recitations in military science, course 3, three recitations a fortnight; by the sophomore class, to recitations in military science, course 2, three hours a fortnight; by the freshmen class, to mathematical drawing.

Mt 1. MILITARY DRILL.—(a.) Infantry exercises begin with setting-up exercises and military gymnastics, and continue with manual of arms and bayonet exercise. School of the company, school of the battalion, and extended order movements follow. (b.) Target practice at known distances up to six hundred yards. Marksman's buttons are awarded to cadets who qualify. (c.) Military signalling with flag, lantern, heliograph, and field telegraph. (d.) Band practice.

Cadets are instructed in the duties of a sentinel, learn advance guard and outpost duties, and work out practically the problems of minor tactics,

† *Three hours a week for the first thirteen and last thirteen weeks of each year.*

Mt 2. GUARD DUTY.—Recitations on the Manual of Guard Duty. Required of sophomores.

Three hours a fortnight for ten weeks.

Mt 3. Drill Regulations.—Recitations on U. S. Infantry Drill Regulations. Required of juniors.

Three hours a fortnight for ten weeks.

Mt 4. Art of War.—Lectures and recitations on military science, including organization, administration, discipline and instruction of armies; logistics; security and information; manufacture and use of gunpowder; high explosives; small arms; cannon; projectiles; armor; mines and torpedoes; construction of military bridges, and destruction of bridges, roads, etc.; coast defences; military law and military history; studies on campaigns illustrating the principles of the art of war. Required of seniors.

The text-book is Mercur's Elements of the Art of War. *Three hours a fortnight for ten weeks.*

THE COURSES OF STUDY.

The courses of study leading to degrees are conveniently arranged in three groups: one group including the general courses; a second including the chemical and other scientific courses; the third including the engineering courses.

These courses occupy four years. In some lines shorter courses are provided. The studies of the freshman year, intended to furnish the foundation for the work of the later years, are nearly the same for all courses. All courses include many studies which are especially useful for general training and culture. Detailed descriptions of these courses will be found in the pages immediately following this general description.

The General Courses.

These are the Classical Course, the Latin Scientific Course, and the Scientific Course. They are designed for those who wish general culture and training, as a preparation for the professions, teaching, or other pursuits. The Latin Scientific course requires no Greek. The Scientific Course requires neither Greek nor Latin. In any of these courses the student may devote especial attention to modern languages, mathematics, physics, or natural history.

The Classical Course will be inaugurated in the fall term of 1899.

The Technical Scientific Courses.

The Chemical Course is designed for those who wish to become professional analysts, teachers of chemistry, or managers of industries in which an extensive knowledge of chemistry is needed.

The Agricultural Course is designed for those who wish to become farmers, teachers or investigators in the agricultural

sciences, or editors of agricultural papers. In this course, agriculture is treated as a branch of technology. For those who wish practical rather than scientific training, shorter courses are provided.

The PREPARATORY MEDICAL COURSE is designed for those who wish to obtain the best preparation for the study of medicine after graduation.

The PHARMACY COURSE is designed for those who wish to prepare themselves for the practice of pharmacy, and at the same time obtain a broad general training.

THE ENGINEERING COURSES.

The CIVIL ENGINEERING COURSE is designed for those who wish to become surveyors, railroad, highway, hydraulic, bridge, or sanitary engineers.

The MECHANICAL ENGINEERING COURSE is designed for those who wish to become managers of manufacturing plants, or general mechanical engineers.

The ELECTRICAL ENGINEERING COURSE is designed for those who wish to fit themselves for any line of practical work in electricity.

THE SHORT COURSES.

The PHARMACY COURSE, of two years, is designed for those who wish to obtain a practical training in pharmacy.

The AGRICULTURAL COURSES, of one year and of two years, are designed for farmers.

The WINTER COURSES IN AGRICULTURE, of six weeks each, are designed for farmers.

DEGREES.—The classical course leads to the degree of Bachelor of Arts. The Latin scientific course leads to the degree of Bachelor of Philosophy. The scientific, the agricultural, the chemical, the preparatory medical, and the pharmacy courses lead to the degree of Bachelor of Science; the civil engineering course leads to the degree of Bachelor of Civil Engineering; the mechanical and electrical engineering courses lead to the degree of Bachelor of Mechanical Engineering.

Three years after graduation, on presentation of a satisfactory thesis and proof of professional work or further study, bachelors receive the appropriate second degree.

Those who complete in a satisfactory manner the courses of one and two years in agriculture, and the course of two years in pharmacy receive certificates. Three years after graduation, the graduates of the course of two years in pharmacy, on presentation of a satisfactory thesis and proof of professional work or further study, receive the degree of Graduate in Pharmacy. The graduates of the long course may receive this degree one year after graduation on proof of professional work or further study. This will not prevent them from receiving the degree of Master of Pharmacy three years after graduation.

Explanation of Tables.—The college year is divided into the fall term of sixteen weeks and the spring term of twenty weeks. Beginning with the school year 1898-'9, the fall term will contain thirteen weeks, and the spring term twenty-two weeks, and the long winter vacation will be shortened. For details see the calendar.

The quota of studies prescribed for each student is such as to require for a minimum, seventeen hours, and for a maximum, twenty hours of class-room work each week, exclusive of declamations and themes. The tables are made so as to require, with the military work of three hours a fortnight, approximately twenty hours work each week. The numbers in the tables show the average number of hours a week given to each study. The number 2.5 means three hours one week and two the next. In making up the quota of studies, laboratory work and other exercises not requiring preparation count as half time—that is, two hours in the laboratory are counted as equivalent to one hour. The hours devoted to such studies are marked with a dagger(†) in the tables.

The capital letters and numerals preceding a study refer to the explanatory statements to be found on the pages given.

STUDIES OF THE FRESHMAN YEAR, ALL COURSES.

For Declamations and Themes see page 31; for Military Science see page 58.

FALL TERM—16 WEEKS.	Hours.	SPRING TERM—20 WEEKS.	Hours.
Eh3, Rhetoric, p. 31	2.5	Eh4, Rhetoric, p. 32	2.5
Ml1, French, p. 32 or Ml5, German, p. 33 or Lt1, Latin, p. 34	(see note) 5.0	Ml2, French, p. 33 or Ml6, German, p. 33 or Lt2, Latin, p. 34	(See note) 5.0
Ms1, Solid Geometry, p. 36, 8 w. Ms2, Algebra, p. 37, 8 w.	5.0	Ms3, Algebra, p. 37, 8 w. and Ms4, Trigonometry, p. 37, 12 w.	5.0
Dr1, Drawing, p. 40	†5.0	Dr2, Math. Drawing, p. 40, 7 w	†3.0
Dr2, Mathematical Drawing, p. 40 3 w	†3.0	Dr3, Mech. Drawing, p. 40 or Ht1, Botany, p. 48	†5.0
Ch1, General Chemistry, p. 41	2.5	Ch2, General Chemistry, p. 41	2.5
Ch3, Laboratory Chemistry, p. 41	†2.0	Ch4, Laboratory Chemistry, p. 42	†2.0

NOTE. Students in the Latin-Scientific Course take Latin, other students take French or German.

THE CLASSICAL COURSE.

This course will be opened to students in the fall of 1899. A graduate will usually be able to complete the work of one of the technical courses in one year.

If the probable demand seems to justify it, an arrangement will be made to allow entering students who have pursued courses equivalent to the required preparatory course, but without Greek, to begin the study of Greek after admission.

Upon graduation the student receives the degree of Bachelor of Arts. Three years later, upon proof of satisfactory advancement, and presentation of a thesis embodying original work or investigation, he receives the degree of Master of Arts.

THE LATIN SCIENTIFIC COURSE.

This course is planned for the benefit of those who seek for general rather than special training, with a view to fit themselves for business or further study. It is especially recommended to those who expect to become teachers. It differs from the usual classical course by omitting Greek. It requires an extensive study of modern languages, and permits a wide choice of elective work. The entrance requirements are those of the best colleges.

The required studies include Latin, English, and modern languages; mathematical and physical science; natural science; literature and civics. By a proper selection of elective studies, the student may give special attention to language, chemistry, natural science, mathematics, or physics. The courses in Latin for the juniors and seniors are offered on alternate years. In the selection of electives, a student may choose studies from those offered to earlier classes than his own.

Upon graduation, the student receives the degree of Bachelor of Philosophy; three years later, on proof of satisfactory advancement, and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Philosophy.

THE LATIN SCIENTIFIC COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

SOPHOMORE YEAR.

FALL TERM—16 WEEKS.

Required.	Hours.
M11, French, p. 32 or M15, German, p. 33	5.0
Ps1, General Physics, p. 39	5.0
Elective.	
M11, French, p. 32	5.0
M15, German p. 33	5.0
Lt3, Latin, p. 34	2.5
Ms5, Analytical Geometry, p. 37.	2.5
Ms6, Analytical Geometry, p. 37.	5.0
Others as in Scientific Course.	

SPRING TERM—20 WEEKS.

Required.	Hours.
M12, French, p. 33 or M16, German, p. 33	5.0
Ps2, General Physics, p. 39	2.5
Elective.	
M12, French, p. 34	5.0
M16, German, p. 33	5.0
Lt4, Latin, p. 34	2.5
Ps5, Laboratory Physics, p. 39	†5.0
Dr3, Mechanical Drawing, p. 40.	†5.0
Ht1, Botany, p. 48.	†5.0
Others as in Scientific Course.	

JUNIOR YEAR.

Required.	
Eh6, English Literature, p. 32	5.0
M11, French, p. 34 or M15, German, p. 33	5.0
Elective.	
M13, French, p. 33	2.5
M17, German, p. 33.	2.5
Lt5, Latin, p. 34	2.5
Lt7, Latin, p. 35	2.5
Cv2, English History, p. 35.	2.5
Others as in Scientific Course.	

Required.	
M12, French, p. 33 or M16, German, p. 33	5.0
Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Elective.	
M14, French, p. 33	2.5
M18, German, p. 33	2.5
Lt6, Latin, p. 34	2.5
Lt8, Latin, p. 35.	2.5
Cv3, American History, p. 35.	2.0
Others as in Scientific Course.	

SENIOR YEAR.

Required.	
Cv9, Constitutional Law and History, p. 36	5.0
Elective.	
Lt5, Latin, p. 34	2.5
Lt7, Latin, p. 35	2.5
Nh11, Geology, p. 45	2.5
Others as in Scientific Course.	

Required.	
Cv8, Political Economy, p. 36.	5.0
Elective.	
Lt6, Latin, p. 34	2.5
Lt8, Latin, p. 35	2.5
Others as in Scientific Course.	

THE SCIENTIFIC COURSE.

This course is arranged for those who wish a broad general training based chiefly upon the study of science, modern languages, and history. It furnishes an admirable preparation for executive positions in banking, commercial, or manufacturing establishments, or for teaching in the mathematical or natural sciences, modern languages or political sciences.

For graduates of modern language or English courses in the preparatory schools, it serves the same general purpose as the classical course for the graduates of the classical preparatory course.

The work of the freshman year, consisting of English, modern languages, history, mathematics, drawing, chemistry, and botany, is required. After the freshman year a large part of the work—varying from one-third at the beginning to three-fourths at the end—is elective. The required courses include analytical geometry, general physics, geology, French, German, English literature, English history, United States history, constitutional history, psychology, logic, and political economy. The elective studies may be selected to give the student a comprehensive view of the mathematical or natural sciences, or to give a specialized course in modern languages, mathematics, physics, or natural science.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

THE SCIENTIFIC COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

SOPHOMORE YEAR.

FALL TERM—16 WEEKS.

Required.	Hours.
Ml1, French, p. 32 / Ml5, German, p. 33	5.0
Ms5, Analyt. Geometry, p. 37, or / Ms6, Analytical Geometry, p. 37	2.5 / 5.0
Ps1, General Physics, p. 39	5.0
Elective.	
Ch5, Chemical Theory, p. 42	2.5
Ch14, Qualitive Analysis, p. 43	†5 0
Nh1, Cryptogamic Botany, p. 44	2 5
Nh2, Laboratory Botany, p. 44	†2.0

SPRING TERM—20 WEEKS.

Required.	Hours.
Ml2, French, p. 33, or / Ml6, German, p. 33	5.0
Ps2, General Physics, p. 39	2.5
Ps5, Laboratory Physics, p. 39	†5.0
Elective.	
Eh5, Anglo-Saxon, p. 32	2.5
Cv1, General History, p. 35	2.5
Ms7, Calculus, p. 37	5.0
Ms11, Advanced Algebra, p. 38	2.5
Ch14, Qualitative Analysis, p. 43,	†5.0
Hts, Histology of Plants, p. 49, 10 w. / Ag13, Bacteriology, p. 48, 10 w,	†5.0

JUNIOR CLASS.

Required.	
Eh6, English Literature, p. 32	5.0
Ml3, French, p. 33 or / Ml7, German, p. 33,	2.5
Cv2, English History, p. 35	2.5
Elective.	
Ml9, Spanish, p. 33	2.5
Ml11, Italian, p. 34	2.5
Ml13, Old French, p. 34	2.0
Cv4, Philosophy of History, p. 35	2.5
Cv11, International Law, p. 36	2.5
Ms8, Calculus, p. 37	2.5
Ms12, Advanced Integral Calculus, p. 38	2.5
Ms14, Theory of Equations, p. 38,	2.5
Ps8, Math. Physics, p. 40	2.5
Ps9, Advan. Lab. Physics, p. 40,	†5.0
Ps11, Electrical Measurements and Testing, p. 40	†4.0
Ch14, Qualitative Analysis, p. 43,	†5.0
Nh5, Invertebrate Zoology, p. 44,	2.5
Nh6, Laboratory Zoology, p. 45,	†5.0
Nh8, Comp. Vert. Zoology, p. 45,	3.5
Me5, Analytic Mechanics, p. 54,	5.0
Ee1, Electricity and Magnetism, p. 56	2.0

Elective.	
Ml4, French, p. 33, or / Ml8, German, p. 33,	2.5
Cv3, American History, p. 35	2.0
Cv5, Psychology, p. 35, 10 w., / Cv7, Logic, p. 36, 10 w	5.0
Elective.	
Eh7, European Literature, p. 32	5.0
Ml10, Spanish, p. 33	2.5
Ml12, Italian, p 34	2.5
Ml14, Old French, p. 34	2.0
Ms9, Descrip. Astronomy, p. 38,	2.5
Ms10, Practical Astronomy, p. 38,	2.5
Ms13, Adv. Integ. Calculus, p. 38,	2.5
Ms15, Differential Equations, p. 38	2.5
Ps7, Advanced Optics, p. 40	2.5
Ps10, Laboratory Physics, p. 40	†5.0
Ch13, Mineralogy, p. 43	†2.0
Ch14, Qualitative Chem., p. 43	†5.0
Ch16, Quantitative Analy., p. 43,	†4.0
Nh7, Helminthology, p. 45	†4.0
Nh9, Laboratory Zoology, p. 45,	†4.0
Nh10, Entomology, p. 45	2.5
Me6, Analytic Mechanics, p. 54, 8 w. / Me7, Applied Mechanics, p. 55, 12 w.	5.0
Ee2, Electricity and Magnetism, p. 56	3.0

SENIOR CLASS.

Required.	
Cv9, Constitutional Law and History, p. 56	5.0
Nh11, Geology, p. 45	2.5
Elective.	
Cv6, Hist. of Philosophy, p. 35	2.5
Ms12, Advanced Integral Calculus, p. 38	2.5
Ms14, Theory of Equations, p. 38	2.5
Ms16, Practical Astronomy, p. 39	2.5

Required.	
Cv8, Political Economy, p. 36	5.0
Elective.	
Cv10, Municipal Law, p. 36	1.0
Cv12, Library Work, p. 36	†5.0
Ms13, Adv. Integral Calculus, p. 38	2.5
Ms15, Differential Equations, p. 38	2.5
Ms17, Practical Astronomy, p. 39,	5.0
Nh3, Advan. Physiology, p. 44	2.5
Nh4, Lab. Physiology, p. 44	†2.0

THE CHEMICAL COURSE.

This course is designed for those who wish to become professional chemists and analysts, chemists or managers in industries which require an extensive knowledge of chemistry, or teachers of chemistry. Attention is given to the preparation of students for the work of the agricultural experiment stations. In addition to a theoretical knowledge of chemistry, the student acquires, in his biological studies, knowledge of comparative anatomy, and of the lower forms of life, and in his work in the chemical laboratory, facility in the manipulation of chemical apparatus and the microscope.

The lectures and recitations are closely associated with practical work in the laboratories where the student, under the guidance of the instructors, becomes acquainted with the methods and apparatus of qualitative and quantitative analysis and metallurgy. The student is drilled in the use of chemical apparatus, accurate observation, and careful interpretation of directions.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

THE CHEMICAL COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

Sophomore Year.

Fall Term—16 weeks.

	Hours.
M11, French, p. 32 or M15, German, p. 33	5.0
Ms5, Analytical Geometry, p. 37.	2.5
Ps1, General Physics, p. 39.....	5.0
Ch5, Chemical Theory, p. 42.....	2.5
Ch14, Qualitative Analysis 43...	†8.0

Spring Term—20 weeks.

	Hours.
M12, French, p. 33 or M16, German, p. 33	5.0
Ps2, General Physics, p. 39.....	2.5
Ps5, Laboratory Physics, p. 39..	†5.0
Ch6, Inorganic Chemistry, p. 42.	2.5
Ch15, Qualitative Analysis, p. 43.	†12.0

Junior Year.

Eh6, English Literature, p. 32 ...	5.0
M17, German, p. 33.....	2.5
Ch7, Inorganic Chemistry, p. 42.	2.5
Ch10, Chemical Readings, p. 42..	1.0
Ch18, Quan. Analysis, p. 43.....	†10.0
Nh5, Invertebrate Zoology, p. 44(2.5 hrs.) or Ee1, Electricity and Magnetism, p. 56 (2 hrs.).....	2.5
Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Ch8, Organic Chemistry, p. 42...	2.5
Ch13, Mineralogy, p. 43.....	†2.0
Ch19, Volumetric Analysis and Assaying, p. 43.....	†15.0
Nh10, Entomology, p. 45.....	2.5

Senior Year.

Cv9, Constitutional Law and History, p. 36....	5.0
Ch11, Laboratory Processes, p. 42	2.5
Ch20, Agricultural Analysis, p. 43.	†5.0
Ch21, Toxicology and Biological Analysis, p. 44	†12.0
Nh11, Geology, p. 45.....	2.5
Cv8, Political Economy, p. 36....	5.0
Ht8, Plant Histology, p. 49, 10 w. Ag13, Bacteriology, p. 48, 10 w.	†5.0
Ch12, Organic Chemicals, p. 42, 4 w .... Ch22, Thesis Work, p. 44, 16 w..	†22.0

THE AGRICULTURAL COURSE.

This course is designed for those who wish to follow some branch of agriculture as a business, and for those who propose to become teachers or investigators in the sciences related to agriculture. It is broadly educational, particularly in the natural sciences and their relations to human needs and activities, and gives an admirable preliminary training for either business or professional life.

The instruction is arranged; first, to secure for the student that intellectual development which is a condition fundamental to the highest success in any calling, and second, to give him the necessary technical knowledge. The distinctive studies of this course are along technical lines, but the branches pertaining to general culture, to social and civil relations, occupy an important place.

The theoretical instruction, especially that of the last two years, is associated with practical work and observations in the field, laboratories, dairy, and forcing houses. Practice is combined with theory whenever it is necessary for the demonstration of a principle or involves skilled labor, but the student's time is not consumed in merely manual operations.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

THE AGRICULTURAL COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

SOPHOMORE YEAR.

FALL TERM—16 WEEKS.

	Hours.
M11, French, p. 32 or M15, German, p. 33	5.0
Ps1, General Physics, p. 39	5.0
Ch5, Chemical Theory, p. 42	2.5
Ch14, Qualitative Analysis, p. 43.	†6.0
Nh1, Cryptogamic Botany, p. 44.	2.5
Nh2, Laboratory Botany, p. 44	†2.0

SPRING TERM—20 WEEKS.

	Hours.
M12, French, p. 32 or M16, German, p. 33	5.0
Ps2, General Physics, p. 39	2.5
Ps5, Laboratory Physics, p. 39	†5.0
Ch6, Inorganic Chemistry, p. 42.	2.5
Ch16, Quantitative Analysis, p. 43	†8.0
Ht8, Histology of Plants, p. 49, 10 w.	†5.0
Ag13, Bacteriology, p. 48, 10 w.	

JUNIOR YEAR.

M17, German, p. 33	2.5
Cv2, English History, p. 35.	2.5
Ch9, Organic Chemistry, p. 42	2.5
Ch20, Agricultural Analysis, p. 43.	†6.0
Nh5, Invertebrate Zoology, p. 44.	2.5
Nh6, Laboratory Zoology, p. 45.	†5.0
Ag1, Biological Chemistry, p. 46.	2.5
Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Nh10, Entomology, p. 45	2.5
Ag2, Biological Chemistry, p. 46.	5.0
Ag4, Agricultural Physics, p. 46, 10 w. Ag5, Agricultural Engineering, p. 47, 10 w.	2.5
Ht2, Pomology, p. 49, 10 w. Ht3, Olericulture, p. 49, 10 w.	2.5
Ht6, Laboratory Horticulture, p. 49	†4.0

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 36	5.0
Nh8, Comparative Vertebrate Zoology, p. 45	3.5
Nh11, Geology, p. 45	2.5
Ag3, Agricultural Chemistry, p. 46, 8 w. Ag6, Stock Feeding, p. 47, 8 w.	2.5
Ht4, Plant Variations, p. 44, 8 w. Ht5, Landscape Gardening, p. 49, 8 w.	2.5
Ht7, Laboratory Horticulture, p. 49	†5.0
Cv8, Political Economy, p. 36	5.0
Nh3, Advanced Physiology, p. 44.	2.5
Ag7, Dairying, p. 47, 6 w. Ag8, Stock Breeding, p. 47, 8 w. Ag9, Poultry Industry, p. 47, 6 w.	5.0
Ag11, Veterinary Science, p. 48.	2.5
Ag12, Dissecting, p. 48, 6 w. Ag10, Dairy Practice, p. 47, 14 w.	†7.0

THE PREPARATORY MEDICAL COURSE.

This course is arranged to meet the needs of those students who propose to become physicians, and offers to all who are interested in the biological sciences a very desirable training for teaching or investigation.

The course, outside of certain general subjects, including mathematics, language, and philosophy, consists mainly of two lines of study, chemical and biological. The chemical studies, general and special, are continued for three and a half years, and include, as class room work, advanced inorganic and organic chemistry, and biological chemistry, and as laboratory work, qualitative and quantitative analysis, toxicology, and testing of drugs. The biological studies begin in the freshman year and continue throughout the course, embracing such subjects as botany, both phænogamic and cryptogamic, invertebrate zoology, comparative vertebrate zoology, human anatomy, advanced physiology, practical bacteriology, plant and animal histology.

Important features of the course, as related to its special objects are: a study of animal parasites, particularly those affecting the human subject; a free use of the microscope in studying vegetable and animal tissues; experience in identifying and cultivating pathogenic organisms; a thorough consideration of the chemistry of foods, of the animal body, and of digestion and metabolism. Students graduated in this course are received into medical schools without examination, and are given credit for the work of the first year by the best schools.

Upon graduation the student receives the degree of Bachelor of Science; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

THE PREPARATORY MEDICAL COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

Sophomore Year.

Fall Term—16 weeks.	Hours.	Spring Term—20 weeks.	Hours.
M11, French, p. 32, or M15, German, p. 33,	5.0	M12, French, p. 33, or M16, German, p. 33,	5.0
Ps1, General Physics, p. 39.	5.0	Ps2, General Physics, p. 39	2.5
Ch5, Chemical Theory, p. 42	2.5	Ps5, Laboratory Physics, p. 39	†5.0
Ch14, Qualitative Analysis, p. 43,	†6.0	Ch15, Qualitative Analysis, p. 43.	†8.0
Nh1, Cryptogamic Botany, p. 44,	2.5	Ht8, Histology of Plants, p. 49, 10 w.	†5 0
Nh2, Laboratory Botany, p. 44	†2.0	Ag13, Bacteriology, p. 48, 10 w.	

Junior Year.

M17, German, p. 33	2.5	Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Cv2, English History, p. 35	2.5	Ch21, Toxicology and Biological Analysis, p. 44	†12.0
Ch9, Organic Chemistry, p. 42	2.5	Nh7, Helminthology, p. 45	†4.0
Ch17, Qualitative Analysis, p. 43,	†6.0	Ag2, Biological Chemistry, p. 46,	5.0
Nh5, Invertebrate Zoology, p. 44,	2.5		
Nh6, Laboratory Zoology, p. 45	†5.0		
Ag1, Biological Chemistry, p. 46,	2.5		

Senior Year.

Cv9, Constitutional Law and History, p. 36	5.0	Cv8, Political Economy, p. 36	5.0
Nh8, Comparative Vertebrate Zoology, p. 45	3.5	Nh3, Advanced Physiology, p. 44,	2.5
Nh11, Geology, p. 45	2.5	Nb4. Lab. Physiology, p. 44	†2.0
Pm3, Laboratory Pharmacy, p. 50	†10.0	Nh12, Human Anatomy, p. 45	2.5
Pm7, Materia Medica, p. 51	3.0	Ag11, Veterinary Science, p. 48	2.5
		Ag14, Animal Histology, p. 48, 10 w. Ag15, Lab. Bacteriology, p. 48, 10 w.	†10.0

THE PHARMACY COURSE.

This course is offered in response to a demand for a thorough training, both general and technical, for those who are to become pharmacists. It aims to combine a broad general culture and thorough preparation along its special lines, with the design of affording both the intellectual development necessary for the well rounded professional or business man, and the necessary technical training. To this end, it includes the same instruction in modern languages, civics, and the sciences, offered in other college courses.

Instruction in pharmaceutical studies is given by means of lectures, recitations, and tests, supplemented by work in the laboratories of chemistry and pharmacy. The instruction embraces qualitative, quantitative, and volumetric analysis, toxicology, and bacteriology, prescriptions, and the preparation of pharmaceutical compounds, and original investigations.

The library contains valuable reference literature in chemistry and pharmacy, and the best chemical and pharmaceutical journals are on file in the reading room.

Upon graduation the student receives the degree of Bachelor of Science; one year later, on proof of professional work or further study, he receives the degree of Graduate in Pharmacy; two years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Master of Science.

THE PHARMACY COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

Sophomore Year.

Fall Term—16 weeks.

	Hours.
Ml1, French, p. 32 or Ml5, German, p. 33	5.0
Ps1, General Physics, p. 39	5.0
Ch5, Chemical Theory, p. 42	2.5
Ch14, Qualitative Analysis, p. 43.	†8.0
Nh1, Cryptogamic Botany, p. 44.	2.5
Nh2, Laboratory Botany, p. 44	†2.0

Spring Term—20 weeks.

	Hours.
Ml2, French, p. 33 or Ml6, German, p. 33	5.0
Ps2, General Physics, p. 39	2.5
Ps5, Laboratory Physics, p. 39	†5.0
Ch6, Inorganic Chemistry, p. 42.	2.5
Ch15, Qualitative Analysis, p. 43.	†8.0
Ht8, Histology of Plants, p. 49, 10 w. Ag13, Bacteriology, p. 48, 10 w.	†5.0

Junior Year.

Ml7, German, p. 33	2.5
Ch7, Inorganic Chemistry, p. 42.	2.5
Ch10, Chemical Readings, p. 42	1.0
Ch17, Quantitative Analysis, p.43	†10.0
Nh11, Geology, p. 45	2.5
Ag1, Biological Chemistry, p. 46.	2.5
Pm5, Inorganic Pharmacognosy, p. 51	2.5
Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Ch8, Organic Chemistry, p. 42	2.5
Nh3, Advanced Physiology, p.44.	2.5
Ag2, Biological Chemistry, p. 46.	5.0
Pm6, Organic Pharmacognosy, p. 51	4.0

Senior Year.

Cv9, Constitutional Law and History, p. 36	5.0
Pm2, Pharmacy, p. 50	5.0
Pm3, Laboratory Pharmacy, p.50.	†10.0
Pm7, Materia Medica, p. 51	3.0
Cv8, Political Economy, p. 36	5.0
Pm4, Pharmacopœia and Prescriptions, p. 50	3.0
Pm8, Thesis Work, p. 51	†10.0
Ch21, Toxicology and Biological Analysis, p. 44, 10 w. Ag15, Laboratory Bacteriology, p. 48, 10 w.	†10.0

THE CIVIL ENGINEERING COURSE.

The object of this course is to give the student a knowledge of mathematics, mechanics, and drawing, experience in the care and use of the ordinary engineering instruments, and a drill in the application of mathematical principles and rules, with a view to fitting him at graduation to apply himself at once to engineering work, and to qualifying him, after experience in the field, to fill positions of importance and trust. The course is planned to furnish not only technical instruction, but also the basis of a liberal education. Especial attention is given to English, modern languages, and economics.

The methods of instruction are recitations, lectures, original problems, work in the testing laboratories, field practice, and designing, including the making of original designs and the preparation of the necessary drawings. Especial effort is made to acquaint the student with good engineering structures, and the standard works in engineering literature.

The engineering building is well equipped and contains recitation rooms, designing rooms, testing laboratories, drawing rooms, and instrument rooms.

Upon graduation the student receives the degree of Bachelor of Civil Engineering; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Civil Engineer.

THE CIVIL ENGINEERING COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

SOPHOMORE YEAR.

FALL TERM—16 WEEKS.

	Hours.
Ml3, French, p. 33, or Ml7, German, p. 33.	2.5
Ms6, Analytical Geometry, p. 37,	5.0
Ps1, General Physics, p. 39.....	5.0
Dr4, Mechanical Drawing, p. 41,	†7.0
Dr6, Descriptive Geometry, p.41,	2.5

SPRING TERM—20 WEEKS.

	Hours.
Ml4, French, p. 33, or Ml8, German, p. 33,	2.5
Ms7, Calculus, p. 37	5.0
Ps2, General Physics, p. 39.	2.5
Ps5, Laboratory Physics, p. 39...	†5.0
Dr7, Descriptive Geometry, p. 41,	1.5
Ce1, Plane Surveying, p. 51	2.5
Ce2, Field Work in Surveying, p. 51.....	†4.0

JUNIOR YEAR.

Cv2, English History, p. 33.....	2.5
Ms8, Calculus, p. 37.....	2.5
Ms12, Adv. Int. Calculus, p38. ,or Ms14, Theory of Equations, p. 38, or Nh11, Geology, p. 45, or Ps8, Mathematical Physics, p. 40, or Ps9, Laboratory Physics, p. 40,	2.5
Ce3, Railroad Engineering, p. 51,	2.5
Ce4, Railroad Work, p. 52	†5.0
Ce5, Highway Engineering, p. 52,	1.0
Ce6, Mechanics, p. 52.	5.0
Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Ms13, Adv. Integral Calculus, p. 38, Ms15, Differential Equations, p. 38, or Ms9, Descriptive Astronomy, p. 38, or Ps7, Advanced Optics, p. 40.	2.5
Dr5, General Drawing, p. 41, 6 w., Dr8, Stereotomy, p. 41, 6 w., Ce9, Higher Surveying, p. 52, 8 w.,	†10.0
Ch13, Mineralogy, p. 43.....	†2.0
Ce7, Mechanics, p. 52.....	5.0

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 36.....	5.0
Ce8, Sanitary Engineering, p. 52, or Mathematics or Physics as in Junior Year....	2.5
Ce10, Hydraulics, p. 53.....	2.5
Ce12, Structures, p. 53	5.0
Ce11, Hydraulics Field Work, p. 53, 8 w.....	†7.0
Ce14, Designing, p. 53, 8 w.....	†7.0
Cv8, Political Economy, p. 36....	5.0
Ms10, Practical Astronomy, p. 38,	2.5
Ce13, Structures, p. 53	5.0
Ce15, Designing and Thesis Work, p. 54, or Mathematics or Physics as in Junior year, elective with †5 hours of Ce15.	†12.0

THE MECHANICAL ENGINEERING COURSE.

This course is designed to give such a training in mathematics, mechanics, the principles of mechanism, in drawing, and manual arts as shall make the student competent to deal successfully with the problems of mechanical engineering. To give breadth, the course includes instruction in the natural sciences, English, modern languages, philosophy, and history. The technical courses include the geometry of machinery, gearing, with problems and practice, transmission of motion and power by belts, cams, couplings and links, the study and designing of the valve and link motions used in the steam engine, analytical mechanics, strength of materials, expansion of steam, construction of steam engines, the designing of steam boilers, and hydro-mechanics.

The methods of instruction include lectures, recitations, practice in the various branches of shop-work, the solution of numerous problems, the testing of theoretical results by comparison with modern machinery, the inspection of important plants, etc.

The department shares Wingate Hall with the departments of civil engineering and physics. The machine shop is equipped with iron working and wood working machinery of the most approved forms.

Upon graduation the student receives the degree of Bachelor of Mechanical Engineering; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Mechanical Engineer.

MECHANICAL ENGINEERING COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

SOPHOMORE YEAR.

FALL TERM—16 WEEKS.

	Hours.
Ml3, French, p. 33 or Ml7, German, p. 33	2.5
Ms6, Analytical Geometry, p. 37.	5.0
Ps1, General Physics, p. 39	5.0
Dr6, Descriptive Geometry, p.41.	2.5
Me1, Carpentry, p. 54	†7.0

SPRING TERM—20 WEEKS.

	Hours.
Ml4, French, p. 33 or Ml8, German, p. 33	2.5
Ms7, Calculus, p. 37	5.0
Ps2, General Physics, p. 39	2.5
Ps5, Laboratory Physics, p. 39	†5.0
Dr7, Descriptive Geometry, p.41.	1.5
Me2, Forge Work, p. 54	†5.0
Me3, Kinematics, p. 54	†4.0

JUNIOR YEAR.

Cv2, English History, p. 35	2.5
Ms8, Calculus, p. 37	2.5
Nh11, Geology, p. 45 or Ms12, Advanced Integral Calculus, p. 38 or Ms14, Theory of Equations, p. 38 or Ps8, Mathematical Physics, p. 40 or Ps9, Laboratory Physics, p. 40.	2.5
Me5, Analytical Mechanics, p.54.	5.0
Me4, Machine Work, p. 54 Ps11, Electrical Measurements and Testing, p. 40, elective with †4 hrs. of Me4.	†8.0
Ee1, Electricity and Magnetism, p. 51	2.0
Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Me6, Analytical Mechanics, p. 55, 8 w. Me7, Applied Mechanics, p. 55, 12 w.	5.0
Me9, Machine Design, p. 55	3.5
Me4, Machine Work, p. 54, Ms13, Advanced Integral Calculus, p. 38, 2.5 hrs. or Ms15, Differential Equations, p. 38, 2.5 hrs. or Ps7, Advanced Optics, p. 40, 2.5 hrs., elective with †5 hrs. of Me4,	†10.0

SENIOR YEAR.

Cv9, Constitutional Law and History, p. 36	5.0
Me8, Applied Mechanics, p.55	2.5
Me10, Hydro-Mechanics, p. 55	2.5
Me11, Heat and Steam, p. 55	2.5
Me12, Steam Boiler Design, p. 55 or Mathematics or Physics, as in Junior year elective with †5 hrs. of Me12.	†12.0
Cv8, Political Economy, p. 36	5.0
Me13, Testing, p. 56	2.5
Me14, Steam Engine, p. 56	3.5
Me15, Steam Engine Design, p. 56, 10 w. and Me16, Thesis Work, p. 56, 10 w. or Mathematics or Physics as in Junior year, elective with †5 hrs. of Me15 and Me16.	†15.0

THE ELECTRICAL ENGINEERING COURSE.

This course is designed to give the student the general and special training which shall fit him to meet successfully the problems that confront the practical electrical engineer. It is identical with the course in Mechanical Engineering for the first two years. During the last two years the student devotes his time about equally to mechanical and electrical work. He gets a knowledge of steam engineering, boiler management, mechanics and kindred subjects, and at the same time becomes familiar with the various branches of electrical engineering. The work consists of lectures, recitations, designing and drafting, laboratory practice, and plant testing. This course is in the charge of the professor of physics.

The lecture-room, drafting-room, and junior laboratory are located in Wingate Hall. The electric lighting plant and dynamo laboratory occupy a building adjoining the Shop. The equipment is ample to give the student a thorough preparation for the work of designing, constructing, testing and operating the various machines and instruments found in an electric plant.

Upon graduation the student receives the degree of Bachelor of Mechanical Engineering; three years later, on proof of satisfactory advancement and on presentation of a thesis embodying original work or investigation, he receives the degree of Mechanical Engineer or Electrical Engineer, as his professional work may make proper.

ELECTRICAL ENGINEERING COURSE.

For the Freshman Year see page 63; for Declamations and Themes see page 31; for Military Science see page 58.

Sophomore Year.

Fall Term—16 weeks.

	Hours.
Ml3, French, p. 33 or Ml7, German, p. 33	2.5
Ms6, Analytical Geometry, p. 37.	5.0
Ps1, General Physics, p. 39	5.0
Dr6, Descriptive Geometry, p.41.	2.5
Me1, Carpentry, p. 54	†7.0

Spring Term—20 weeks.

	Hours.
Ml4, French, p. 33 or Ml8, German, p. 33	2.5
Ms7, Calculus, p. 37	5.0
Ps2, General Phyics, p. 39	2.5
Ps5, Laboratory Physics, p. 39..	†5.0
Dr7, Descriptive Geometry, p.41.	1.5
Me2, Forge Work, p. 54.	†5.0
Me3, Kinematics, p. 54	†4.0

Junior Year.

Cv2, English History, p. 35	2.5
Ms8, Calculus, p. 37	2.5
Nh11, Geology, p. 45 or Ms12, Advanced Integral Calculus, p. 37 or Ms14, Theory of Equations, p. 38 or Ps8, Mathematical Physics, p. 40 or Ps9, Laboratory Physics, p. 40.	2.5
Ps11, Electrical Measurements and Testing, p. 40	†4.0
Me5, Analytical Mechanics, p. 54.	5.0
Ee1, Electricity and Magnetism, p. 56	2.0
Me4, Machine Work, p. 54	†4.0
Cv5, Psychology, p. 35, 10 w. Cv7, Logic, p. 36, 10 w.	5.0
Me6, Analytical Mechanics, p. 55, 8 w. Me7, Applied Mechanics, p. 55, 12 w.	5.0
Me9, Machine Design, p. 55 or Ms13, Advanced Integral Calculus, p. 38 or Ms15, Differential Equations, p. 38 or Ps7, Advanced Optics, p. 40,	3.5
Ee2, Electricity and Magnetism, p. 56	3.0
Me4, Machine Work, p. 54	†5.0

Senior Year.

Cv9, Constitutional Law and History, p. 36	5.0
Me11, Heat and Steam, p. 55	2.5
Ee3, Electrical Machinery, p. 56.	2.5
Ee5, Electrical Design, p. 57	†7.0
Ee7, Laboratory Electricity, p. 57	†5.0
Ee9, Power Stations, p. 57 or Ee10, Shop Work, p. 57, †5.0 or Me3, Applied Mechanics, p. 54 or Mathematics or Physics, as in Junior Year	2.5
Cv8, Political Economy, p. 36	5.0
Me14, Steam Engines, p. 56 or Mathematics or Physics as in Junior Year,	3.5
Ee4, Electrical Engineering, p. 57, 10 w. 1st	5.0
Ee6, Electrical Design, p. 57, 10 w. 1st	†10.0
Ee8, Theoretical Electricity, p. 57, 10 w. 2nd	2.5
Ee11, Thesis Work, p.58, 10 w. 2nd.	†15.0

THE SHORT COURSE IN PHARMACY.

This course, of two years, is designed for students who, for lack of time or other reasons, are unable to take the four years course. The more general educational studies of the full course are omitted, but it is the aim to offer as broad a range of subjects as can be undertaken without sacrifice of thoroughness in the technical work. The course corresponds, in general, to the usual full course of the pharmaceutical college. The work required of the student will occupy his whole time during the college years of nine months, and will usually exclude any practical work in drug stores, during term time.

Those who intend to fit themselves for pharmaceutical work are urged to consider carefully the superior advantages of the long course. In addition to commercial advantages, it offers still greater attractions in those broadening and developing influences, which are the most important results of education. The growing importance of biological, sanitary, and medical sciences, the pharmacist's relation to them, and his influential position, make it increasingly necessary to his success, that he be not only a well trained man in the technical branches, but an educated man in the broadest sense.

Students who complete this course in a satisfactory manner receive a certificate. Three years later, on presentation of a satisfactory thesis and proof of professional work, or further study, they receive the degree of Graduate in Pharmacy.

THE SHORT COURSE IN PHARMACY.

For Declamations and Themes see page 31; for Military Science see page 58.

First Year.

Fall Term—16 weeks.

	Hours.
Ps3, Elementary Physics, p. 39..	2.5
Ch1, General Chemistry, p. 41....	2.5
Ch3, Laboratory Chemistry, p. 41.	†2.0
Ch14, Qualitative Analysis, p. 43.	†10.0
Pm1, Pharmacy, p. 50	5.0
Pm5, Inorganic Pharmacognosy, p. 51.....	2.5

Spring Term—20 weeks

	Hours.
Ps4, Elementary Physics, p. 39..	2.0
Ps6, Laboratory Physics, p. 39...	†1.0
Ch2, General Chemistry, p. 41 ...	2.5
Ch4, Laboratory Chemistry, p. 42.	†2.0
Ch16, Quantitative Analysis, p. 43, 10 w. / Ch19, Volumetric Analysis and Assaying, p. 43, 10 w.	†13.0
Ht1, General Botany, p. 48	5.0
Pm6, Organic Pharmacognosy, p. 51.	4.0

Second Year.

Ch9, Organic Chemistry, p. 42 ...	2.5
Nh2, Laboratory Botany, p. 44...	†2.0
Ag1, Biological Chemistry, p. 46.	2.5
Pm2, Pharmacy, p. 50	5.0
Pm3, Laboratory Pharmacy, p. 50.	†10.0
Pm7, Materia Medica, p. 51.....	3.0
Ch21, Toxicology and Biological Analysis, p. 44, 10 w. / Ag13, Bacteriology, p. 48, (10 w., 5 hrs.)	†13.0
Ag2, Biological Chemistry, p. 46.	5.0
Pm4, Pharmacopœia and Prescriptions, p. 50....	3.0
Pm8, Thesis Work, p. 51.....	†10.0

THE SHORT COURSES IN AGRICULTURE.

The short courses in agriculture are designed for those who wish to become farmers and can devote but limited time to study. They are intended to give the greatest amount of available and directly useful knowledge that can be acquired in the time allowed. To adapt them to the varying conditions of preparation and of time that can be given, two courses are offered, one extending through two college years, the other through one year. The former affords a wider range of study and practice, but the latter in its narrower range offers a plan of systematic study on prominent and important agricultural subjects. The entrance examination for these courses is the same as for the full four years course, with the exception that no geometry is required and no algebra beyond simple equations of the first degree. Applicants must be at least fifteen years of age.

The annual expenses are the same as those of students in the four years courses, as stated in the article on expenses. No charge is made for rooms.

These courses, including the work in agriculture, horticulture, animal industry and veterinary science, are in the general charge of the professor of agriculture.

Students who complete these courses in a satisfactory manner, receive certificates.

SPECIAL COURSES.

No short courses have been arranged in other departments than those mentioned above, but special students are received in any department upon giving satisfactory evidence that they are fitted to pursue a special course with profit. The studies must usually be selected from those announced in the catalogue. Special courses, essentially the same as a regular course laid down in this catalogue, will not be allowed. If more students desire to take any study than can be accommodated, preference will be given to those in the regular and longer courses.

The expenses will be the same as those of students in the full courses. No charge will be made for rooms.

WINTER COURSES IN AGRICULTURE.

Three winter courses are offered, designed for farmers or young men expecting to become farmers, who are unable to devote a longer time to study. These courses are under the direction of the Professor of Agriculture, to whom inquiries should be addressed. A special circular is issued each year in the month of October.

These courses begin on the first Tuesday of January and continue six weeks. They are made up of lectures and laboratory work arranged in three groups. A student can attend the lectures of one course only. Each course consists of two terms of six weeks. The first year is introductory to the second, but is complete in itself. No charge is made for tuition.

The instruction includes lectures and recitations on agricultural chemistry, animal industry, dairy husbandry, horticulture, veterinary science, agricultural engineering, entomology, and business law, combined with practical work in the barn, dairy and forcing houses.

It is not claimed that anything like a complete training in agricultural science can be given in six weeks, or in twelve, but the fundamental principles may be discussed briefly. The student may obtain an understanding of the ways in which science helps agriculture, and may gain a knowledge of principles which will prove of great aid in using agricultural literature, and an incentive to home reading and study.

The General Course.

This course is designed to give a variety of information useful to the general farmer, without giving special attention to one branch of business. It is arranged for two years' study.

First Winter.—Plant and animal nutrition, 20 hours. Commercial fertilizers and farm manures, 10 hours. Breeds, breeding and feeding, 20 hours. Farm machinery, 10 hours. Veterinary science, 15 hours. Bacteriology, 5 hours. Injurious insects, 15 hours. Injurious fungi, 20 hours. Crops and crop production, 5 hours. Farm gardening, 25 hours. Dairying, 40 hours. Farm accounts, 10 hours.

Second Winter.—Breeds, breeding and feeding, 25 hours. Farm machinery, 10 hours. Farm drainage, 20 hours. Carpentry, 15 hours. Blacksmithing, 15 hours. Agricultural mechanics, 20 hours. Veterinary science, 20 hours. Injurious insects, 20 hours. Crops and crop production, 5 hours. Economic botany, 30 hours. Business law, 15 hours.

Course in Dairying.

This course is designed for those who are to make dairying a specialty or for those who propose to become expert butter makers or cheese makers.

A certificate of proficiency to those students who pursue the full course, and serve for two seasons in a satisfactory manner in a butter or cheese factory will be granted. The course is arranged for two years' study.

First Winter. Plant and animal nutrition, 20 hours. Diseases of domestic animals, 20 hours. Milk, butter and cheese, 80 hours. Cows, breeding, handling and judging, 55 hours. Buildings and furnishings, barns, creameries, etc., 10 hours. Accounts, 10 hours.

Second Winter. Milk, butter and cheese, 80 hours. Bacteria, effects upon dairy products, 20. Veterinary science, 20 hours. Boiler and engine, 10 hours. Business law, 15 hours. Carpentry, 15 hours. Cows, feeding, 35 hours.

Course in Horticulture.

This course is designed for those who expect to give special attention to fruit growing, market gardening, or floriculture. It is arranged for two years' study.

First Winter. Plant and animal nutrition, 20 hours. Commercial fertilizers and farm manures, 20 hours. Injurious insects, 35 hours. Injurious fungi, 20 hours. Fruit culture, 45 hours. Vegetable gardening, 45 hours.

Second Winter. Farm machinery, 10 hours. Farm drainage, 20 hours. Carpentry, 15 hours. Agricultural mechanics, 20 hours. Economic botany, 30 hours. Ornamental gardening, 30 hours. Green house construction and management, 45 hours. Business law, 15 hours. Accounts, 10 hours.

THE LAW SCHOOL.

The Trustees have voted to establish a Law School to be opened in the fall of 1898. Graduates of colleges or of approved schools will be admitted without examination, as candidates for the degree of Bachelor of Laws. Other applicants must pass an examination to satisfy the faculty that they are prepared to pursue the required course of study. Special students, not candidates for a degree, will be admitted without examination and may pursue any studies for which they are prepared. The fees will be $30 a term or $60 a year, and must be paid in advance. The diploma fee is $10. There will be no other fees. A part, or all of the lectures will be delivered in the city of Bangor, which is nine miles from the seat of the University, connected with it by an electric railroad. A special circular on the work of the school, to be issued in May, 1898, may be obtained on application to the President of the University, at Orono.

THE LIBRARY AND READING ROOM.

The library, on the first floor of Coburn Hall, contains over ten thousand bound volumes, and about three thousand pamphlets. The growth of the library is about one thousand volumes a year.

A large and convenient reading room adjoins the book room. About one hundred and eighty of the most important literary, scientific, and technical papers, magazines, and reviews, both American and foreign, are kept on file.

COBURN HALL.

The library is open for eight hours daily except on Sunday. Students are allowed direct access to the shelves. Students may have two books each at a time, to be kept two weeks, when they may be renewed, unless some one else has put in an application for them. There is a fine of two cents a day for books kept over time. If additional books are needed for special work, they may be obtained on application to the librarian.

A reading room located on the first floor of Oak Hall, under the management of the students, is provided with the principal daily and weekly newspapers.

THE MUSEUM AND HERBARIUM.

The museum is located in two stories of the wing of Coburn Hall. In the upper story are exhibited the mineral collection, geological specimens and plant models. The mineral cabinet embraces a general collection of three hundred species of the more common minerals, arranged for study according to Dana's system. There is a fine collection of economic minerals, donated by the National Museum; and an educational series of rocks, donated by the U. S. Geological Survey. The geological cabinet embraces a collection of plant and animal fossils, and a collection of the more important fragmental, crystalline, and volcanic rocks.

On the lower floor are the collections of vertebrate and invertebrate animals, and a set of animal models. The invertebrates include working collections of sponges, hydroids, corals, echinoderms, vermes, mollusks, crustaceans, and insects, besides interesting native and exotic exhibition specimens of all the above groups. The vertebrates include the nucleus of a collection of State fishes, reptiles, birds, and mammals, besides a set of type exotic mammals. The collection of animal models embraces a human manikin, special models of the human eye, ear, and larynx, and models of an insect, leach, snail, fish, snake, and bird.

The herbarium consists of the original Maine Collection of about 500 species; the New Collection of Maine Plants of 800 species; the Blake Herbarium of 7,000 species, including phenogams and cryptogams; Ellis and Everhard's North American Fungi, comprising thirty-five centuries; Halsted's Lichens of New England; Underwood's Hepaticæ; Cummings and Seymour's North American Lichens; Cook's Illustrative Fungi; Collins' Algæ of the Maine Coast; a collection of illustrative cryptogams in boxes; Harvey's Weeds and Forage Plants of Maine of 300 species; Halsted's Weeds; a collection of grasses and forage plants of 400 species; a collection of United States woods prepared by the United States Department of Agriculture; a collection of seeds and fruits; numerous slides for the microscope.

THE AGRICULTURAL EXPERIMENT STATION.

The Maine Agricultural Experiment Station owes its existence to an act of Congress, popularly known as the Hatch Act, which became a law on March 2, 1887. This act specifically provides that the station shall be a department of the University of Maine.

The affairs of the station are considered by an advisory Council consisting of a committee of the trustees of the University, the president of the University, members of the station staff, and representatives from the State Board of Agriculture, the State Pomological Society, and the Patrons of Husbandry. This Council refers its results to the trustees for ratification. The station receives $15,000 annually from the general government.

The inspection of fertilizers, the inspection of concentrated commercial feeding stuffs, and the testing of the graduated glassware used in creameries, are intrusted to the station through its director, who is responsible for the execution of the public laws relating to these matters.

The publications of the station consist of annual reports and frequent short bulletins. The latter are intended to convey to the farmer the results that relate to farm practice. The annual reports contain a fuller statement of the proceedings of the station, involving the technical language of science. These reports include nothing of value to practical agriculture not set forth in the bulletins. All station bulletins are sent to farmers on request, free of expense. The annual reports are sent only when expressly requested.

THE FIELD DAY.

One day in each year is known as the Field Day of the agricultural departments. The usual exercises are omitted and all departments are thrown open to visitors. Especial effort is made to exhibit the facilities of the agricultural departments in the most thorough manner. Special rates are obtained on the railroad for those who come from a distance. The attendance has ranged from twelve hundred to seventeen hundred persons. The programme includes informal addresses by members of the faculty in regard to the collections, demonstrations with some of the more important apparatus, exhibitions of improved agricultural machinery, the operation of the dairy building, an exhibit of agricultural products, tools, and supplies contributed by manufacturers and dealers. The experiments of the experiment station are explained by the investigators.

In the afternoon the students give an exhibition drill. Circulars in regard to Field Day may be obtained by addressing the Professor of Agriculture.

THE GENERAL REGULATIONS.

The regulations in regard to the selection of studies, standings and grades, absences from recitations and examinations, rhetorical exercises, entrance conditions, leave of absence, attendance upon church and chapel, penalties, examinations, and athletics are printed in full in the annual report of the President for the year ending December 31, 1894.

By these regulations, the quota of regular studies for each student is made to be such as to require, for a minimum, seventeen hours, and, for a maximum, twenty hours of class room work each week. In the application of this rule, two hours of laboratory work and of other exercises not requiring preparation, count as one.

Excuses for absence from individual exercises are not required. Each student is expected to pursue his work in a manly way, absenting himself from recitations and other exercises only when he has sufficient reason for doing so. Of these reasons he is to be the judge, but a student who is absent from ten per cent or more of the exercises in any study, is not admitted to the final examination. A student who fails to pass at any examination, is absent, or is excluded from any examination, has an opportunity to make up his deficiency at the special examinations which are held just before the beginning of each term, but if he fails to pass in any study before it is again taken in class, he is required to attend the recitations.

Each student is given a report of his work shortly after the close of each term. Parents or guardians may obtain these reports from the Secretary upon application.

SCHOLARSHIP HONORS.

Honors for scholarship are of two kinds, general and special. General honors are given at graduation to students who attain an average standing after the freshman year of ninety on a scale of one hundred. Special honors are granted for the satisfactory completion of an honor course in addition to the work required for a degree. An honor course must involve at least ninety recitations or an equivalent. The methods of work are determined by the instructor. The list of honor courses with full description is published by the secretary of the faculty four weeks before commencement. Honor courses are open to juniors and seniors who have attained a standing of eighty per cent in all previous work, and an average grade of ninety per cent in the previous work of the department in which the honors are sought. A student cannot register for an honor course without the consent of the faculty, nor later than the fourth week of the fall term. Upon completion of a course the student's work will be tested by an examination or thesis, under the direction of the faculty committee on honor courses, and the result together with the instructor's report will be laid before the faculty. The faculty may grant special honors to those students who receive the approval of the committee, but will not do so if their general work is unsatisfactory. Honors and their nature are stated upon the commencement program and published in the annual catalogue.

STUDENT EXPENSES.

Many students go through college for an annual expenditure of a little more than $200, exclusive of the expense of clothing, traveling, and vacations, and very many earn a part of this sum, by vacation work. An estimate of the necessary annual expenses of a student may be made from the following table. It should be noticed that clothes, traveling, vacation, society and personal expenses are not included. These vary according to individual tastes and habits. The table is made up for students who room in the dormitory, and board at the Commons. The necessary expenses of other students are sometimes lower, but usually slightly higher. In all cases an additional allowance must be made for personal incidental expenses. The expenses of the first year are higher than those of later years.

ANNUAL STUDENT EXPENSE.

Tuition, 2 terms at $15.00,	$30.00
Registration fee, 2 terms at $5.00,	10.00
Incidentals, 2 terms at $10.00,	20.00
Laboratory fees, average, about,	8.00
Text-books, about,	15.00
Board, 34 weeks at $3.00,	102.00
Heat and light for half room, and general care of dormitory, about,	15.00
Total,	$200.00

The tuition charge is $15.00 a term or $30.00 a year, and all students are subject to this charge except those in the short winter courses in agriculture, for which no tuition charge is made. Worthy students, residents of Maine, who need assistance may obtain from the University loans sufficient to

cover the tuition charge. The regulations in regard to these loans are fully stated in the article on loans.

The registration fee of $5.00 must be paid at the beginning of each term before the student enters any classes.

The incidental fee is $10.00 a term or $20.00 a year, and covers heat and light for public buildings, military and physical culture, reading-room charges, care and cleaning of recitation rooms and other public rooms, and miscellaneous expenses.

The cost of text-books will average almost exactly $15.00 a year for the course. These may be bought from the librarian at cost, but must be paid for on delivery. The expense can be decreased by buying second-hand books and selling them when used.

Students in the laboratories and shops pay a charge, to cover cost of materials and maintenance. These charges are as follows:—biology, per term, $1.00; chemistry, per term, about $3.00; bacteriology, per course, $3.00; physics, per course, $2.00; pharmacy, per term, about $3.50; mineralogy, $2.00; natural history, per course, $2.00; electrical engineering, per course, $2.50; shop, per course, $5.00. Students in elementary botany furnish their own instruments. Laboratory charges in the civil engineering course are very few, but traveling expenses in visiting engineering works will be nearly equivalent to the laboratory expenses of other courses.

In some years the students spend a week in camp, for military instruction. The expense is borne partly by the university and partly by the student. The expense per student, is about $5.00.

The largest item of expense is for board. In the Commons, the university boarding house, each student pays his share of the cost, usually about $2.75 to $3.00 a week. Board may be obtained in clubs or private families at prices ranging from $3.00 to $3.25 a week.

Rooms in the dormitory are free, but students supply their own furniture, and pay for heat and light, for the lighting and care of the halls and public rooms of the dormitory, and for damages. This charge may be expected to be about $15.00 a year, for each student, when two occupy a room. No student whose conduct is objectionable will be allowed to room

in the dormitory. Furnished rooms, with light and heat, may be obtained in the village for $1.50 a week if occupied by one person, or $2.00 a week if occupied by two persons.

The estimate for furniture is made on the assumption that two students will unite in furnishing a room, and that something will be realized from the sale of furniture upon graduation.

Students are charged for all damages done to university property or to that of other students.

Each student is required to deposit with the Treasurer, upon admission, a bond, with two good names as sureties, in the amount of $150.00, to cover term bills. Blanks on which bonds should be made out will be furnished by the Secretary on application. Those who keep a sufficient deposit with the Treasurer to cover the bills of one term will not be required to furnish a bond. No student will be graduated who is in debt to the treasury.

LOANS.

Tuition Loans.

Worthy students, residents of Maine, who need assistance may borrow from the university treasury a sum sufficient to pay the tuition charge.

Borrowers are required to give endorsed notes or other satisfactory security. The loans bear interest at six per cent per annum, and are due $30.00 a year, beginning with the first year after graduation, but may be paid earlier. No member of the faculty is accepted as endorser.

Loans are granted by a committee consisting of the President and two other members of the faculty. The number of loans may not exceed one-third of the number of students in attendance. Loans are granted to cover the tuition charges of only one year at a time.

The first grant of loans for each university year is made in June preceding. Applications for loans are considered during May,

and to insure attention at this time should be forwarded to the President not later than May 15. A second award is made in the fall term. Applications should be made not later than October 10. They must be made to the President upon blanks to be obtained from the Secretary of the Faculty. Awards made in June may be withdrawn from students who do not register, or claim their loans by October 10.

The Kittredge Loan Fund.

This fund, amounting to nearly one thousand dollars, was established by Nehemiah Kittredge of Bangor. It is in the control of the President and Treasurer of the university, by whom it is loaned to needy students. In the deed of gift, it was prescribed that no security should be required but personal notes bearing interest at the prevailing rate. Loans are made on the condition that the interest shall be paid promptly, and the principal returned from the first earnings after graduation.

THE ALUMNI.

THE GENERAL ALUMNI ASSOCIATION.

William R. Pattangall, President, Machias.
Charles P. Weston, Recording Secretary, Orono.
Edward H. Kelley, Corresponding Secretary, Bangor.
Albert H. Brown, Treasurer, Old Town.
Harold S. Boardman, Necrologist, Bangor.

LOCAL ASSOCIATIONS.

The West Maine Association.—S. W. Bates, Portland, President.

The North Maine Association.—Harvey B. Thayer, Presque Isle, President.

The Boston Association.—L. C. Southard, 73 Tremont St., Boston, Mass., President.

The New York Association.—A. E. Mitchell, 90 High St., Passaic, N. J., President.

THE WASHINGTON (D. C.) ASSOCIATION.—F. Lamson-Scribner, U. S. Department of Agriculture, President.

THE PACIFIC ASSOCIATION.—A. W. Saunders, Brookings, South Dakota, President.

THE PENOBSCOT VALLEY ASSOCIATION.—J. M. Oak, Bangor, President.

CLASS SECRETARIES.

E. J. Haskell, '72, *Westbrook;* J. M. Oak, '73, *Bangor;* W. H. Gerrish, '74, *Deering;* E. F. Hitchings, '75, *Waterville;* E. M. Blanding, '76, *Bangor;* S. W. Gould, '77, *Skowhegan;* John Locke, Jr., '78, *Portland;* F. E. Kidder, '79, *1362 California St., Denver, Colo.;* J. M. Bartlett, '80, *Orono;* H. M. Plaisted, '81, *724 Commercial Building, St. Louis, Mo.;* W. R. Howard, '82, *Belfast;* L. W. Taylor, '83, *Calais;* E. S. Abbott, '84, *Bridgton;* J. N. Hart, '85, *Orono;* R. K. Jones, '86, *Orono;* D. W. Colby, '87, *Middletown, Conn.;* F. S. Brick, '88, *Belfast;* Nellie W. Reed, '89, *Stillwater;* N. C. Grover, '90, *Orono;* H. G. Menges, '91, *21 College Ave., Medford, Mass.;* G. F. Atherton, '92, *Cape Elizabeth;* G. F. Rowe, '93, *Lincoln*; J. M. Kimball, '94, *4 Mt. Vernon St., Boston, Mass.;* F. Damon, '95, *Bangor;* P. D. Sargent, '96, *Machias;* A. J. Patten, '97, *Orono.*

ORGANIZATIONS.

FRATERNITIES.—The following fraternities are represented in the university: the Q. T. V., the B. Θ. Π., the K. Σ., the A. T. Ω., the O. E. H. Π., the Δ. P., the Φ. Γ.

ASSOCIATIONS.—The Young Men's Christian Association, The Athletic Association, The Publishing Association, The Electrical Society, The University Press Club, The University Band, The Orchestra, The Photographic Society, The Glee Club, The Debating Society, and The Scientific Association of the University of Maine.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION.—The Young Men's Christian Association, composed of students, has for its object the promotion of Christian fellowship and aggressive Christian work. Among its members are leaders in the athletic, social, and intellectual life of the university.

THE UNIVERSITY PUBLICATIONS.

THE ANNUAL CATALOGUE OF THE UNIVERSITY OF MAINE.—This contains descriptions of the courses of study, lists of the trustees, faculty, and students, and other information relating to the university.

THE SHORT CATALOGUE OF THE UNIVERSITY OF MAINE.—This is an abbreviated form of the catalogue.

THE ANNUAL REPORT OF THE TRUSTEES, PRESIDENT, AND TREASURER, TO THE GOVERNOR AND COUNCIL OF THE STATE.—The reports of the Trustees and President include an account of the general affairs and interests of the university for the year, reports from the heads of the departments of instruction, and the report of the experiment station. The report for the odd years contains the biennial catalogue of graduates.

THE UNIVERSITY BULLETINS.—These are occasional publications containing reports of the investigations or researches made by the university officers, or other information of public interest relating to the university.

THE UNIVERSITY CIRCULARS.—These are small occasional pamphlets, issued for special purposes.

THE ANNUAL REPORT OF THE EXPERIMENT STATION.—This is a part of the Annual Report described above.

THE EXPERIMENT STATION BULLETINS.—These are popular accounts of the results of station work which relate directly to farm practice.

THE CADET.—This is an illustrated monthly magazine published during the university year by an association of the students.

THE PRISM.—This is an elaborately illustrated annual published by the junior class.

THE COMMENCEMENT.

The Commencement exercises of 1897 were as follows:—

Saturday, June 19: Junior Exhibition.

Sunday, June 20: Baccalaureate Sermon, by Rev. James M. Buckley, D. D., LL. D.

Monday, June 21: College Convocation, including reports of departments and student enterprises, and the awarding of prizes; Class Day Exercises.

Tuesday, June 22: Exhibition Drill; Receptions by the Fraternities; Commencement Concert.

Wednesday, June 23: Commencement Exercises; Announcement of "The University of Maine;" Commencement Dinner; Meeting of the Alumni Association; President's Reception.

CERTIFICATES AND DEGREES.

Certificates were presented to the following persons upon completing the Course in Library Economy:

Hope Gardner, Caribou.

Dora Lucinda Parker, Davenport, Mass.

Certificates were presented to the following persons upon completing the short Course in Pharmacy:

Charles Simming Bartlett, Norway.

James Alfred Bird, Presque Isle.

Alvin Willard Keirstead, Durham.

Albert James Nute, East Boston, Mass.

Charles Harry White, Orono.

The first degree was conferred on the following persons:

Edward Moseley Atwood, B. S., (in Chemistry), Hampden.
William Thomas Brastow, B. C. E., Rockport.
William Bourne Brown, B. S., (in Agriculture), Livermore Falls.
Charles Sidney Bryer, B. C. E., Boothbay.
Stephen Sans Bunker, B. C. E., Bar Harbor.
John Parker Chase, B. M. E., North Edgecomb.
Justin Robert Clary, B. C. E., Hallowell.
Stanwood Hill Cosmey, B. C. E., Bangor.
Lindsay Duncan, B. S., Northfield, Mass.
Charles Henry Farnham, B. C. E., Beverly, Mass.
Perley Francis Goodridge, B. M. S., Orono.
Frank Edward Gorham, B. M. S., Round Pond.
Vernon Kimball Gould, B. M. E., Milo.
Oscar Llewellyn Grover, B. C. E., Medford, Mass.
Stanley Jacob Heath, B. S., (in Chemistry), Bangor.
William Lawrence Holyoke, B. M. E., Brewer.
Ernest Henry Macloon, B. M. E., (in Electricity), Deering.
Andrew Jarvis Patten, B. S., (in Chemistry), Cherryfield.
Byron Frank Porter, B. S., Stillwater.
Joseph White Humphrey Porter, B. S., Stillwater.
Allen Rogers, B. S., (in Chemistry), Hampden.
Myron Roswell Russell, B. S., (in Pharmacy), Vernon, Vt.
Howard Eveleth Stevens, B. C. E., Bluehill.
Edwin Carleton Upton, B. S., Bath.
Marcus Libby Urann, B. S., Dover.

The second degree was conferred upon the following persons, upon presentation of satisfactory theses, and proof of professional and scientific work extending over a period of not less than three years:

Edmund Clark, M. S., New York, N. Y.
Nathan Clifford Grover, C. E., Orono.
Austin Herbert Keyes, B. Ph., Auburn, R. I.
Harry Foster Lincoln, M. E., (in Electricity), Hampton, N. H.
William Nickels Patten, C. E., New York, N. Y.

Special degrees were conferred upon the following persons as indicated:

Edward Sewall Abbott, M. S., Bridgton.

Hugo Clark, C. E., Bangor.
Irving Nason Clark, C. E., New York, N. Y.
Elmer E. Greenwood, C. E., Skowhegan.
Austin Dinsmore Houghton, M. E., Terre Haute, Ind.
Leon Houston Jones, C. E., Rosindale, Mass.
James Martin Nowland, M. S., Quincy, Mass.
William Brewster Oleson, M. S.
William Robinson Pattangall, M. S., Machias.
Walter Franklin Robinson, C. E., Richmond.
Ambrose Harding White, C. E., Brewer.

SCHOLARSHIPS AND PRIZES.

THE KIDDER SCHOLARSHIP.—The Kidder Scholarship was endowed by Frank E. Kidder, Ph. D., of Denver, Colorado, a graduate of the university in the class of 1879, to be awarded to a member of the Junior class to be selected by the President and the Faculty.

THE PRENTISS PRIZE, the gift of Mrs. Henry E. Prentiss, of Bangor, will be awarded to that member of the Junior class who shall present the best oration at the Junior exhibition. In the award of this prize, both the composition and the delivery of the oration will be considered.

THE PRENTISS DECLAMATION PRIZE, the gift of Mrs. Henry E. Prentiss of Bangor, for excellence in elocution, will be awarded to the best speaker in the Sophomore class.

THE LIBBEY PRIZE, the gift of the Hon. Samuel Libbey of Orono, will be awarded to the student who shall present the best essay upon an agricultural topic. The essays must be handed to the Professor of Agriculture on or before the first Monday in June.

THE WALTER BALENTINE PRIZE, the gift of Whitman H. Jordan, Sc. D., Geneva, N. Y., will be awarded to that member of the Junior class who shall excel in biological chemistry.

THE KENNEBEC COUNTY PRIZE, the gift of the Hon. William T. Haines of Waterville, will be awarded to that member of the Senior class who shall write the best essay on applied electricity.

The Franklin Danforth Prize, the gift of Edward F. Danforth of Skowhegan, a graduate of the university in the class of 1877, in memory of his father, Franklin Danforth, will be awarded to that member of the Senior class in the agricultural course who shall attain the highest standing.

The prizes were awarded last year as follows:

The Kidder Scholarship to Oscar Bixby, of Anson.

The Prentiss Prize to Herbert Ivory Libby, of Biddeford.

The Prentiss Declamation Prize to Fred Walter Armes, of Gardiner.

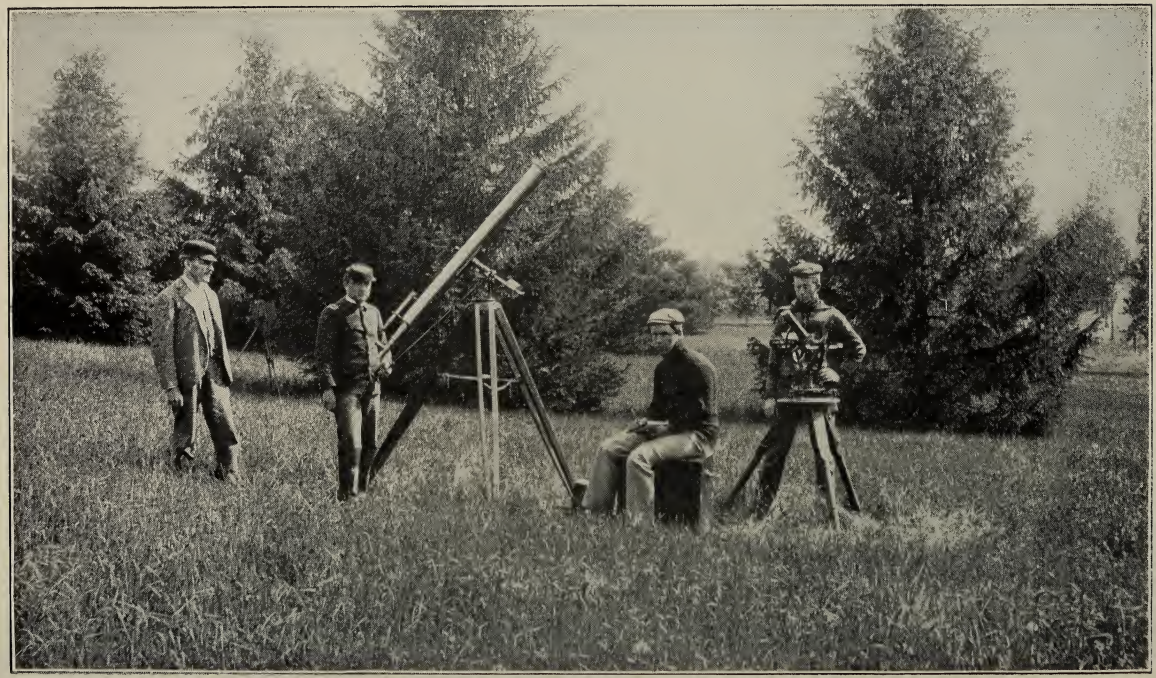
The Libbey Prize to Vernon Kimball Gould, of Milo.

The Walter Balentine Prize to Alfred Andrews Starbird, of South Paris.

The Franklin Danforth Prize to William Bourne Brown, of Livermore Falls.

The Decker Prize, for the greatest improvement in general standing during the year, to Wallace Edward Belcher, of Plymouth, Mass.

The Aroostook County Prize, for excellence in freshman algebra, to Fred Carlton Mitchell, of West Newfield.



FIELD WORK.

APPOINTMENTS.

SPEAKERS AT COMMENCEMENT, JUNE, 1897.

Edwin Carleton Upton, Bath; Justin Robert Clary, Hallowell; Charles Henry Farnham, Beverly, Mass.; Myron Roswell Russell, Vernon, Vt.; Allen Rogers, Hampden; William Thomas Brastow, Rockport; Marcus Libby Urann, Dover.

SPEAKERS AT THE JUNIOR EXHIBITION, JUNE, 1897.

Elmer Drew Merrill, East Auburn; George Arthur Whittemore, Framingham, Mass.; Herbert Ivory Libby, Biddeford; Charles Abram Pearce, Fort Fairfield; Gracia Lillian Fernandez, Dexter; Bertrand Randall Johnson, Deering; Charles Staples Webster, Portland.

SPEAKERS AT THE SOPHOMORE PRIZE DECLAMATION CONTEST, DECEMBER, 1896.

Fred Walter Armes, Gardiner; John Henry Swain, Skowhegan; Edward Everett Palmer, South Bridgton; Mildred Louise Powell, Orono; Clinton Leander Small, Auburn; Archer Lewis Grover, Bethel; Charles Comfort Whittier, Skowhegan; Pearl Clayton Swain, Skowhegan.

PUBLIC WORSHIP.

Religious services of a simple character are held in the university chapel every day except Sunday and Saturday. All students are required to be present. Every student is required to attend one church service on Sunday. Voluntary religious services under the direction of the Young Men's Christian Association are held weekly.

LOCATION.

The university has a beautiful and healthful location in Penobscot county and the town of Orono, half way between the villages of Orono and Stillwater, three miles from the city of Oldtown, and nine miles from the city of Bangor. The Stillwater river, a tributary of the Penobscot, flows in front of the buildings, forming the western boundary of the campus. Orono is upon the Maine Central Railroad and is easy of access from all parts of the State.

The Bangor, Orono, and Oldtown Electric Railroad, runs through the university grounds. Visitors will find it convenient to take the electric cars at Bangor, Veazie, or Oldtown, as the electric road does not run to the railroad station at Orono. Baggage may be sent to Orono by railroad, or from Bangor by the electric road.

MILITARY INSTRUCTION.

Military instruction is required by United States law. The department is under the charge of a graduate of the United States Military Academy, an officer of the regular army of the United States, detailed by the President of the United States for this purpose. Rifles and equipment for light battery, cadet rifles, ammunition, and accoutrements are furnished by the War Department. The course has especial reference to the duties of officers of the line. The students are organized into an infantry battalion of four companies, an artillery company, band, and signal corps, officered by cadets selected for their character, soldierly bearing, and military efficiency. The corps is instructed and disciplined in accordance with rules prescribed by the President of the United States.

The trustees have prescribed a uniform consisting of dark blue blouse, with State of Maine buttons, and gold braid on cuffs; trousers of light blue; blue cap with gold wreath ornament; white duck trousers for hot weather. The officer's blouse is of the pattern prescribed by U. S. army regulations, without collar ornaments. Students are required to wear their uniforms during military exercises, and are allowed to do so at other times. The uniform can be obtained of Bangor firms at the following prices, fixed by competitive bids. Students are at liberty to purchase elsewhere, subject to the approval of the military instructor, who is required to see that the quality and fit are satisfactory. The prices for the year ending November 30, 1897, were as follows: blouse $7.00; cloth trousers $5.00; three pairs of duck trousers $3.00; cap $1.50; three pairs of gloves 60c.; three belts 30c.; total, $17.40.

The three seniors who attain the highest standing in the military department are reported to the Adjutant General of the

U. S. Army, and their names are printed in the U. S. Army Register. Cadets who have satisfactorily completed the course in military science receive at graduation a certificate of military proficiency and are reported to the Adjutant General of Maine.

Military certificates were awarded at the Commencement of 1897 to the members of the graduating class, and they were reported to the Adjutant General of Maine. William Thomas Brastow, Charles Sidney Bryer, and Stephens Sans Bunker were reported to the Adjutant General of the United States Army.

THE COBURN CORPS OF CADETS.

Lieutenant Herbert Nathan Royden, 23rd U. S. Infantry, Commanding.

GENERAL STAFF.

Captain and Adjutant—Charles Staples Webster.
First Lieutenant and Quartermaster—John Washington Dearborn.
First Lieutenant and Chief Signal Officer—Leon Edward Ryther.
Second Lieutenant and Secretary—Dana True Merrill.

INFANTRY.

Major—Samuel Clark Dillingham.
First Lieutenant and Adjutant—Harry Allison Higgins.
First Lieutenant and Quartermaster—Horace Loring White.
Sergeant Major—Rufus Houdlette Carlton.
Quartermaster Sergeant—William Bradley Morell.
Color Sergeant—Herman Frank Noyes.
Sergeant and Chief Musician—Herbert Palmer Mayo.

Company A.

Captain	Herbert Ivory Libby.
First Lieutenant	Wilson Darling Barron.
Second Lieutenant	Alfred Andrews Starbird.
Second Lieutenant	Llewellyn Nathaniel Edwards.
First Sergeant	Charles Comfort Whittier.
Sergeant	William Augustine Murray.
Sergeant	Cyrenius Walter Crockett.
Sergeant	Howard Brett.
Corporal	Charles Omer Porter.
Corporal	Frank McDonald.
Corporal	Philip Ross Goodwin.
Corporal	De Forest Henry Perkins.
Corporal	Arthur Southwick Page.
Corporal	Charles Hutchinson Lombard.

Company B.

Captain	Bernard Alston Gibbs.
First Lieutenant	Leroy Eugene Dow.
Second Lieutenant	Fred William Sawtelle.
Second Lieutenant	John Francis Arche.
First Sergeant	Clinton Leander Small.
Sergeant	Alson Edwin Boynton.
Sergeant	Eben Pierce Bassett.
Sergeant	Oliver Otis Stover.
Corporal	Frank Harvey Bowerman.
Corporal	William Thomas Lane.
Corporal	Clinton Llewellyn Cole.
Corporal	William Joseph Burgess.
Corporal	Leo Bernard Russell.
Corporal	Malcolm Cole Hart.

Company C.

Captain	Albion Dana Topliff Libby.
First Lieutenant	Charles Abram Pearce.
Second Lieutenant	Ray Herbert Manson.
Second Lieutenant	Warner Edwin Welch.
First Sergeant	Fred Walter Armes.

Sergeant ..... Edward Everett Palmer.
Sergeant ..... Leonard Harris Ford.
Sergeant ..... George Woodman Hersey.
Corporal ..... Fred Carlton Mitchell.
Corporal ..... Benjamin Franklin Faunce.
Corporal ..... Alan Lawrence Bird.
Corporal ..... William Goldsbrough Jones.
Corporal ..... Charles Duren Roston.
Corporal ..... Ernest Carleton Forbush.

Company D.

Captain ..... Roderick Desmond Tarr.
First Lieutenant ..... Ralph Hamlin.
Second Lieutenant ..... Alden Percy Sprague.
Second Lieutenant ..... Wilfred Reuben Tolman.
First Sergeant ..... Arthur Clement Wescott.
Sergeant ..... Herman Henry Oswald.
Sergeant ..... Edward Raymond Mansfield.
Sergeant ..... Charles Curtis Scott.
Corporal ..... George Trueman Wilson.
Corporal ..... Roy Huntley Brown.
Corporal ..... John Gardner Lurvey.
Corporal ..... Julian Sturdivant Dunn.
Corporal ..... Fred Hale Vose.
Corporal ..... Henry Frank Drummond.

Band.

Captain and Musical Director ... George Arthur Whittemore.
First Lieutenant ..... Carl Gardiner Wiswell.
First Sergeant ..... Edwin Melcher Smith.
Segt. & Asst. Musical Director, Irving Harry Drew.
Sergeant ..... Charles Elbert Blackwell.
Corporal ..... Frank Albert Noyes.

Signal Corps.

First Lieutenant ..... Harry Matthew Lincoln.
Second Lieutenant ..... Bertrand Randall Johnson.
First Sergeant ..... Wallace Edward Belcher.
Sergeant ..... Maurice Henry Powell.

ARTILLERY.

Captain	Ray Parker Stevens.
First Lieutenant	Charles Parker Crowell.
First Sergeant	Frank Lothrop Batchelder.
Sergeant	Winfield Benson Caswell.
Sergeant	Ralph Herbert McPheters.
Corporal	Daniel Lunt Cleaves.
Corporal	Wilfred Harold Caswell.
Corporal	Frederick Hatherly Knight.

CATALOGUE OF STUDENTS.

POST GRADUATES.

Brastow, William Thomas, B.C.E.,	Rockport,	Mrs. J. H. Emery.
Cosmey, Stanwood Hill, B. C. E.,	Bangor,	Bangor.
Goodridge, Perley Francis, B. M. E.,	Orono,	Mr. O. T. Goodridge.
Porter, Byron Frank, B. S.,	Stillwater,	Stillwater.
Porter, Joseph White Humphrey, B. S.,	Stillwater,	Stillwater.
Rogers, Allen, B. S.,	Hampden,	Prof. A. B. Aubert.
Upton, Edwin Carleton, B. S.,	Bath,	Mr. O. C. Dunn.

SENIORS.

Bailey, Fred Wesley,	Belfast,	Mr. L. P. Harris.
Barron, Wilson Darling,	Dexter,	K. Σ. House.
Brann, Lewis Jefferson,	Gardiner,	B. Θ. Π. House.
Bryant, Edwin Scammon,	Portland,	212 Oak Hall.
Clark, Frederick Robinson,	Portland,	203 Oak Hall.
Crowell, Charles Parker,	Orono,	Home.
Davis, Edward Harmon,	Auburn,	K. Σ. House.
Dearborn, John Washington,	Bradford Center.	207 Oak Hall.
Dillingham, Samuel Clark,	Portland,	B. Θ. Π. House.
Dolley, Walter,	Gorham,	A. T. Ω. House.
Dow, Leroy Eugene,	Portland,	211 Oak Hall.
Dunn, Rena Ethel,	Orono,	Home.
Dunn, Rossell Olin,	Orono,	Home.
Edwards, Llewellyn Nathaniel,	Oaks,	104 Oak Hall.
Ellis, Walter Lincoln,	Waterville,	A. T. Ω. House.
Farrar, Lottie Gertrude,	Bangor,	Mr. C. Buffum.

Fernandez, Gracia Lillian,	North Dexter,	Oldtown.
Frost, George Sherman,	Bridgewater, Conn.,	109 Oak Hall.
Gibbs, Bernard Alston,	Glenburn,	207 Oak Hall.
Hamlin, Ralph,	Orono,	Home.
Higgins, Harry Allison,	Woodfords,	A. T. Ω. House.
Johnson, Bertrand Randall,	Deering,	B. Θ. Π. House.
Lawrence, George Warren,	South Gardiner,	202 Oak Hall.
Libby, Albion Dana Topliff,	North Scarboro,	102 Oak Hall.
Libby, Herbert Ivory,	Biddeford,	Q. T. V. House.
Lincoln, Harry Matthew,	Bangor,	205 Oak Hall.
Manson, Ray Herbert,	Gardiner,	311 Oak Hall.
Merrill, Dana True,	East Auburn,	206 Oak Hall.
Merrill, Elmer Drew,	East Auburn,	206 Oak Hall.
Merrill, Harrison Pratt,	Wareham, Mass.,	208 Oak Hall.
Pearce, Charles Abram,	Fort Fairfield,	A. T. Ω. House.
Ryther, Leon Edwin,	Bondsville, Mass.,	K. Σ. House.
Sawtelle, Fred William,	Fryeburg,	201 Oak Hall.
Small, Albert Clifford,	Lisbon Center,	302 Oak Hall.
Smith, George Albert,	Auburn,	208 Oak Hall.
Sprague, Alden Percy,	Vanceboro,	311 Oak Hall.
Starbird, Alfred Andrews,	South Paris,	209 Oak Hall.
Stevens, Ray Parker,	Brooklin,	Q. T. V. House.
Sturgis, Edwin Albert,	Lewiston,	A. T. Ω. House.
Tarr, Roderick Desmond,	Biddeford,	Q. T. V. House.
Tolman, Fred Moses,	Carroll,	K. Σ. House.
Tolman, Wilfred Reuben,	Augusta,	203 Oak Hall.
Webster, Charles Staples,	Portland,	B. Θ. Π. House.
Welch, Warner Edwin,	Orono,	Home.
White, Horace Loring,	Portland,	K. Σ. House.
Whittemore, George Arthur,	Framingham, Mass.,	Q. T. V. House.
Wiswell, Carl Gardner,	East Machias,	Q. T. V. House.

JUNIORS.

Arche, John Francis,	Hallowell,	201 Oak Hall.
Armes, Fred Walter,	Gardiner,	K. Σ. House.
Bassett, Eben Pierce,	Bangor,	303 Oak Hall.
Batchelder, Frank Lothrop,	Machias,	Mrs. J. H. Emery.
Belcher, Wallace Edward,	Plymouth,	B. Θ. Π. House.

Blackwell, Charles Elbert,	Madison,	Q. T. V. House.
Boynton, Alson Edwin,	Alna,	Q. T. V. House.
Brett, Howard,	Bangor,	303 Oak Hall.
Brown, John Wilson,	Brimfield, Mass.,	Mr. J. C. Park.
Carleton, Rufus Houdlette,	Cedar Grove,	K. Σ. House.
Caswell, Winfield Benson,	Waterville,	A. T. Ω. House.
Clark, Harold Hayward,	Ellsworth,	A. T. Ω. House.
Crockett, Cyrenius Walter,	Rockland,	B. Θ. Π. House.
Crosby, Charles Elmer,	Albion,	107 Oak Hall.
Downing, Marshall Buckland,	Dover,	204 Oak Hall.
Drew, Irving Harry,	Bar Harbor,	Q. T. V. House.
Eldridge, Charles Thayer,	Foxcroft,	Mr. J. P. Spearen.
Fernald, Reginald Lovejoy,	Orono,	Home.
Flint, Bert Whitaker,	Bangor,	109 Oak Hall.
Ford, Leonard Harris,	Bangor,	Home.
Fortier, Arthur Henry,	Oldtown,	Home.
Grover, Archer Lewis,	Bethel,	309 Oak Hall.
Haney, William Wallace,	Eastport,	Mr. O. T. Goodridge.
Hersey, George Woodman,	Portland,	A. T. Ω. House.
Heyer, Harry Sanford,	Friendship,	304 Oak Hall.
Hilton, George Libby,	Bradley,	Mr. F. C. Park.
Hoxie, Hall Farrington,	Waterville,	209 Oak Hall.
Leathers, Harry Hewes,	Bangor,	301 Oak Hall.
McPheters, Ralph Herbert,	Orono,	Home.
Maddocks, Howard Lewis,	Skowhegan,	306 Oak Hall.
Mansfield, Edward Raymond,	Orono,	Home.
Mayo, Herbert Palmer,	South Boston, Mass.,	310 Oak Hall.
Morell, William Bradley,	Amherst, Mass.,	Mrs. A. M. [Graves.
Morrill, Walter Jean,	Madison,	K. Σ. House.
Morrisette, Rena Ermyra,	Stillwater,	Home.
Mosher, Edwin St. Elmo,	Presque Isle,	309 Oak Hall.
Moulton, Frank Augustus,	Limington,	Mr. J. P. Spearen.
Murray, William Augustine,	Pittsfield,	K. Σ. House.
Nelson, William,	Cumberland Center,	305 Oak [Hall.
Noyes, Herman Frank,	Freeport,	Q. T. V. House.
Oswald, Herman Henry,	Philadelphia, Pa.,	A.T.Ω. House.

Palmer, Edward Everett,	South Bridgton,	B. Θ. Π. House.
Powell, Maurice Henry,	Orono,	Home.
Powell, Mildred Louise,	Orono,	Home.
Pretto, Henry Joseph,	Orono,	Home.
Rockwood, Ralph Hubbard,	Waterville,	210 Oak Hall.
Scott, Charles Curtis,	Dexter,	Q. T. V. House.
Sidensparker, Stanley,	Warren,	Mrs. Buck.
Small, Clinton Leander,	Auburn,	306 Oak Hall.
Smith, Edwin Melcher,	Gardiner,	305 Oak Hall.
Stephens, Allen Whitmore,	Oldtown,	Oldtown.
Stinson, Frank Minott,	Bath,	310 Oak Hall.
Stover, Oliver Otis,	Freeport,	107 Oak Hall.
Swain, John Henry,	Skowhegan,	Mr. S. J. Steward.
Swain, Pearl Clayton,	Skowhegan,	Mr. S. J. Steward.
Veazie, Marcellus Maurice,	Islesboro,	Mrs. I. Strout.
Webber, Mortimer Asa,	Fort Fairfield,	A. T. Ω. House.
Wescott, Arthur Clement,	Portland,	Q. T. V. House.
Whittier, Charles Comfort,	Skowhegan,	Q. T. V. House.

SOPHOMORES.

Alden, Harley Roscoe,	Auburn,	K. Σ. House.
Beedle, Harry Woodward,	South Gardiner,	210 Oak Hall.
Bird, Alan Lawrence,	Rockland,	B. Θ. Π. House.
Bowerman, Frank Harvey,	Victor, N. Y.,	Prof. J. S. [Stevens.
Bradford, Fred Prince,	Cambridgeport, Mass.,	Mr. C. [P. Crowell.
Brown, Roy Huntley,	Montague City, Mass.,	Mr. J. P. [Spearen.
Burgess, William Joseph,	Calais,	Mr. H. Finn.
Burnham, Agnes Rowena,	Oldtown,	Oldtown.
Cargill, Walter Neal,	Liberty,	Mr. O. T. Goodridge.
Caswell, Wilfred Harold,	Bridgton,	Mrs. Marsh.
Clark, Wilkie Collins,	Skowhegan,	Q. T. V. House.
Cleaves, Daniel Lunt,	Portland,	Mr. O. T. Goodridge.
Cole, Clinton Llewellyn,	Pleasantdale,	112 Oak Hall.
Collins, George,	Athol, Mass.,	304 Oak Hall.
Cross, Harry,	Brewer,	Mr. J. P. Spearen.

Cushman, Harvey Barnes,	Rockland,	A. T. Ω. House.
Davis, Fred Thaddeus,	Orono,	Home.
Davis, Harry Ashton,	Orono,	Home.
Drummond, Henry Frank,	Bangor,	K. Σ. House.
Dunn, Julian Sturdevant,	Cumberland,	K. Σ. House.
Eaton, Herbert Davidson,	Bangor,	Bangor.
Elliott, Wesley Clarendon,	Patten,	Mr. J. P. Spearen.
Faunce, Benjamin Franklin,	Norway,	406 Oak Hall.
Forbush, Ernest Carlton,	Marlboro, Mass.,	Mrs. Hayes.
French, Joseph Edwin,	South Chesterville,	Mr. J. P. Spearen.
Gilman, John Averill,	Bangor,	B. Θ. Π. House.
Goodwin, Philip Ross,	Randolph,	312 Oak Hall.
Gray, Charles Perley,	Oldtown,	Oldtown.
Hall, Fred Elmer,	Houlton,	Mrs. J. H. Emery.
Hamlin, George Otis,	Orono,	Home.
Hart, Malcolm Cole,	Willimantic,	Q. T. V. House.
Hatch, Howard Andrew,	Lindenville, O.,	B. Θ. Π. House.
Hayes, James Arthur,	Randolph,	211 Oak Hall.
Hersey, Guy Alfred,	Bangor,	Bangor.
Horner, Leon Herbert,	Springfield, Mass.,	K. Σ. House.
Holley, Clifford Dyer,	Farmington,	308 Oak Hall.
Houghton, Luke,	Anson,	308 Oak Hall.
Howe, Ernest Judson,	South Lancaster, Mass.,	111 Oak Hall.
Johnson, Frank Ortelle,	North Berwick,	Q. T. V. House.
Jones, William Goldsbrough,	Orono,	Home.
Knight, Frederick Hatherly,	Deering,	Q. T. V. House.
Lane, William Thomas,	Portland,	A. T. Ω. House.
Langstroth, Walter,	Somerville, Mass.,	Mr. T. Simmons.
Leavitt, David Willard,	Parsonsfield,	Stillwater.
Leslie, Raymond Everett,	Patten,	Mr. J. P. Spearen.
Lombard, Charles Hutchinson,	Portland,	112 Oak Hall.
Love, Alexander,	East Bluehill,	111 Oak Hall.
Lurvey, John Gardner,	Portland,	104 Oak Hall.
McDonald, Frank,	Portland,	Q. T. V. House.
MacDougal, Wilbur Edwin,	South Lincoln,	Mr. J. P. Spearen.

Mann, Edwin Jonathan,	West Paris,	Mr. F. C. Park.
Mayo, Raymond James,	North Anson,	Q. T. V. House.
Merrill, Wilbur Louis,	East Parsonsfield,	K. Σ. House.
Miles, Elmer Laroy,	Patten,	409 Oak Hall.
Mitchell, Curtis Boyce,	Unity,	Mr. W. G. Thurlow.
Mitchell, Fred Carleton,	West Newfield,	Q. T. V. House.
Mitchell, Frank Henry,	Charleston,	307 Oak Hall.
Monohon, George Robert,	Cherryfield,	A. T. Ω. House.
Moore, Percy Chadwick,	Bangor,	Bangor.
Morris, Lewis Gilbert,	Westbrook,	302 Oak Hall.
Murphy, George Ferguson,	Goodwin's Mills,	102 Oak Hall.
Nason, Leon Alonzo,	Bangor,	Bangor.
Nickerson, Percy Lee,	Swanville,	Mrs. I. Strout.
Noyes, Elmer John,	Berlin, N. H.,	K. Σ. House.
Noyes, Frank Albert,	Berlin, N. H.,	K. Σ. House.
Owen, Alden Bradford,	West Pembroke,	406 Oak Hall.
Page, Arthur Southwick,	Fairfield,	211 Oak Hall.
Payzant, George Francis,	Windsor Forks, N. S.,	307 [Oak Hall.
Perkins, De Forest Henry,	North Brooksville,	106 Oak Hall
Philoon, Daniel Lara,	Auburn,	312 Oak Hall.
Porter, Charles Omer,	Cumberland Mills,	K. Σ. House.
Ricker, Percy Leroy,	Westbrook,	410 Oak Hall.
Robbins, Charles Alphonso,	Patten,	Mr. J. P. Spearen.
Rollins, Clarence Herbert,	Veazie,	Veazie.
Rollins, Frank Main,	Waterville,	A. T. Ω. House.
Roston, Charles Duren,	Dorchester, Mass.,	Mr. [Elijah Webster.
Russell, Leo Bernard,	Farmington,	Q. T. V. House.
Scribner, Roland Sampson,	Patten,	409 Oak Hall.
Smith, Edward Henry,	East Sullivan,	410 Oak Hall.
Stickney, Grosvenor Wilson,	Clinton, Mass.,	Mr. F. C. Park.
Stowell, Clarence Warner,	Brimfield, Mass.,	206 Oak Hall.
Strout, Howard Clinton,	Orono,	Home.
Tate, Edwin Morrel,	South Corinth,	Mr. Spaulding.
Tate, Fred Foy,	South Corinth,	Mr. Spaulding.
Theriault, Dana Leo,	Caribou,	Mr. F. C. Park.
Thombs, William Brackett,	Gorham,	A. T. Ω. House.

Vose, Fred Hale,	Milltown, N. B.,	B. Θ. Π. House.
Walker, Roger Morrill,	Anson,	Q. T. V. House.
Walton, Russell Davenport,	Orono,	Home.
Webster, Frank Elijah,	Patten,	Mr. Elijah Webster.
Weston, Benjamin Thomas,	Madison,	Mr. L. P. Harris.
Weston, Wallace Augustus,	Madison,	Mr. L. P. Harris.
Whitcomb, Joseph Onon,	Morrill,	106 Oak Hall.
Wilson, George Truman,	Columbia Falls,	A. T. Ω. House.
Wormell, Ralph Geddes,	Waterville,	A. T. Ω. House.

FRESHMEN.

Adams, Herbert Luther,	Warren, Mass.,	107 Oak Hall.
Adams, Nathan Herbert,	Notch,	Mr. J. P. Spearen.
Adams, Robert Carr,	Bowdoinham,	B. Θ. Π. House.
Anderson, Thomas Alexander,	Hartland,	Q. T. V. House.
Armes, Will Addison,	Gardiner,	Mrs. H. Finn.
Barney, John E,	Canaan, N. H.,	Mr. J. P. [Spearen.
Bartlett, Mark Jonathan,	Montville,	Mr. L. P. Harris.
Bartlett, Wales Rogers,	Center Montville,	Mr. L. P. [Harris.
Beattie, Willard Morgan,	Oldtown,	Oldtown.
Bennett, Waldo Horace,	Newport,	Q. T. V. House.
Benson, Frank Smith,	Bangor,	B. Θ. Π. House.
Boardman, William Harris,	Calais,	Mrs. H. Finn.
Brown, Arthur Fred	Belfast,	A. T. Ω. House.
Bryer, Theodore Stevens,	Boothbay,	409 Oak Hall.
Buck, Henry Alfred,	Bucksport,	404 Oak Hall.
Buck, Thomas,	Orland,	Mrs. H. Finn.
Call, Fred Hyram,	Richmond,	Mr. J. P. Spearen.
Cary, Lewis Robinson,	Bowdoinham,	Prof. G. M. [Gowell.
Chandler, Burt Clayton,	Westbrook,	K. Σ. House.
Clark, Samuel,	Waterville,	A. T. Ω. House.
Clement, Willis Patten,	Portland,	A. T. Ω. House.
Cobb, Arthur Leroy,	South Vassalboro,	Mrs. [McMillan.
Crosby, Robert Augustine,	Benton Falls,	Q. T. V. House.
Davis, Edmund Ireland,	Bangor,	B. Θ. Π. House.

Davis, Fred Merrill,	Lewiston,	405 Oak Hall.
Davis, George Harold,	Auburn,	K. Σ. House.
Fitzgerald, Elsie Eunice,	Oldtown,	Oldtown.
Fraser, Gertrude Lee,	Oldtown,	Oldtown.
Freeman, George Leonard,	West Gray.	K. Σ. House.
Gilbert, Frank Yuba,	Orono,	Home.
Goodwin, George Estyn,	Gorham, N. H.,	K. Σ. House.
Greene, James Arthur,	Bluehill,	408 Oak Hall.
Hackett, Eugene Allen,	Caribou,	Mr. J. C. Park.
Harvey, Clifford Dawes,	Newport,	Q. T. V. House.
Harvey, Leroy Harris,	Orono,	Home.
Hayden, Frank Stanley,	Rockland,	Mr. L. P. Harris.
Hennessy, Daniel Edward,	Bath,	B. Θ. Π. House.
Hoyt, Henry Perez,	Fort Fairfield,	Mrs. A. Cowan.
Hunter, William Bruce,	Vanceboro,	Mr. L. P. Harris.
Hussey, William Franklin,	Waterville,	A. T. Ω. House.
Jeffery, Perley Eugene,	North Monmouth,	Mr. J. P. [Spearen.
Johnston, William Alden,	Vanceboro,	Mr. L. P. Harris.
Keller, Percy Raymond,	West Rockport,	Stillwater.
Larrabee, Fay Frederick,	Prospect Harbor,	Mr. J. P. [Spearen.
Larrabee, Leo Leroy,	Prospect Harbor,	Mr. J. P. [Spearen.
Leonard, Herbert Henry,	Orono,	Home.
Libby, Wilbert Andrew,	Standish,	Mr. L. P. Harris.
Linn, Robert Wilson,	Hartland,	Q. T. V. House.
Lowell, Frank Holt,	North Penobscot,	Mr. J. P. [Spearen.
McGinness, John Richard,	Cleveland, O.,	Mrs. W. Colburn.
Maddan, Martin Crowell,	Oldtown,	Oldtown.
Maddocks, Lilian Maud,	Monroe,	Rev. C. E. Lund.
Mansfield, Harold Wilder,	Union,	Mr. J. P. Spearen.
Martin, Bertrand Clifford,	Fort Fairfield,	Mrs. A. Cowan.
Martin, Fred Lewis,	Bluehill,	306 Oak Hall.
Merriam, Richard,	Morrill,	106 Oak Hall.
Merrill, Maurice Barnaby,	Stillwater,	Stillwater.
Mitchell, Charles Augustus,	West Newfield,	Q. T. V. House.
Morse, Arthur Bartlett,	Jersey City, N. J.,	B. Θ. Π. House.

Newhouse, Ernest Albion,	East Boston, Mass.,	Mrs. N. McPheters.
Peaks, Alfred Rio,	Foxcroft,	Mr. J. P. Spearen.
Perley, Fred Bickwell,	Cross Hill,	Mrs. McMillan.
Powers, Tom Safford,	Orono,	Home.
Pritham, Harry Charles,	Freeport,	Mr. L. P. Harris.
Rastall, Walter Henry,	Chicago, Ill.,	K. Σ. House.
Robinson, Alson Haven,	Orono.	Home.
Ross, Mowry,	West Woodstock, Conn.,	Mr. J. P. Spearen.
Saunders, Henry Augustus,	Bluehill,	308 Oak Hall.
Sawyer, Carroll Ray,	Milbridge,	Mrs. I. Strout.
Sawyer, William McCrillis,	Bangor,	B. Θ. Π. House.
Shaw, Scott Parker,	North Gorham,	Mr. L. P. Harris.
Shorey, Percival Gardner,	Belfast.	Mr. J. P. Spearen.
Stevens, Moses Bickford, Jr.,	Cutler,	Q. T. V. House.
Stilphen, Arthur Melvin,	Pittston,	Mrs. T. Shatney.
Stilphen, Charles Augustus,	Pittston,	Mrs. T. Shatney.
Swasey, Lawrence Mabry,	Limerick,	Mr. L. P. Harris.
Tasker, John Elwood,	Iceboro,	K. Σ. House.
Thompson, Samuel Day,	Bangor,	Mr. J. P. Spearen.
Varney, Lewis Goodrich,	Windham Center,	K. Σ. House.
Ward, Thomas Hale,	Fryeburg,	Mr. L. P. Harris.
Watson, Ernest Lauren,	Brunswick,	Mr. L. P. Harris.
Watts, Frank Erwin,	West Falmouth,	Stillwater.
Webster, William Bryant,	Coventry, Vt.,	Mr. Morrison.
Whittier, Clement,	Orono,	Home.
Willard, Fred Albert,	Lisbon,	Mrs. McMillan.
Woodbury, Stephen Edward,	Beverly, Mass.,	Mr. L. P. Harris.
Worth, Howard Walter,	Pleasantdale,	Mr. L. P. Harris.

SPECIAL STUDENTS.

Goodspeed, Leland Francis,	Turner Center,	408 Oak Hall.
Loud, Herbert Spencer,	Round Pond,	405 Oak Hall.
McCarthy, Matthew,	Bangor,	404 Oak Hall.
McCrillis, Ernest Julian,	Henniker, N. H.,	Mr. O. T. Goodridge.
McCrillis, William George,	Henniker, N. H.,	Mr. O. T. Goodridge.

Merrill, Adelbert Samuel,	North Belfast.	302 Oak Hall.
Phillips, Irving Wadsworth,	Somers, Conn.,	Mr. J. P. [Spearen.
Ridlon, Horace Denver,	Stetson,	Mrs. Marsh.
Sabine, Ralph Harvey,	Pomfret, Conn.,	Mr. J. P. [Spearen.
Sawyer, Charles Jewett,	Bangor,	B. Θ. Π. House.
Tolford, Arthur Rœbuck,	Portland,	Mr. J. P. Spearen.

STUDENTS IN SHORT WINTER COURSE IN AGRICULTURE.

Bamford, William Guy,	Livermore Falls,	Mr. J. P. [Spearen.
Dunn, Rossell Olin,	Orono,	Home.
Gee, Alberto Henry,	Lewiston,	Mrs. S. Gee.
Haseltine, George Clifton,	Kenduskeag,	Mr. O. C. Dunn.
King, Ralph Luther,	Monmouth,	Mr. J. P. Spearen.
King, Walter Maurice,	Charleston,	Mr. O. C. Dunn.
Noble, Walter Channing,	South Waterford,	Mr. J. P. [Spearen.
Pierce, Tennie Smith,	New Portland,	Mr. J. P. [Spearen.
Stickney, Clinton Stanley,	Brownville,	Mr. O. C. Dunn.
True, Charles Wesley,	North Fayette,	Mr. J. P. [Spearen.
Wells, Charles Nelson,	Auburn,	Mr. J. P. Spearen.

STUDENTS IN THE SUMMER SCHOOL.

Abbee, Mrs. Mary Catherine, East Exeter.
Teacher in Rural School.

Abbott, Florence Augusta, Orono.
Teacher in Orono Primary School.

Angell, Lewis Gazley, Oldtown.
Student in Oldtown High School.

Austin, Emma Eliza, North Lamoine.
Teacher.

Bussell, Edith Mae, Oldtown.
Student, High School.

Backus, Louise Jordan, Ellsworth.
Teacher.

Barker, Bernice Claire, East Exeter.
Teacher.

Bird, Bertha Isabel, 24 Congress St., Belfast.
Principal Grammar School, Belfast.

Blake, Alfred Cookman, Wilton.
Principal of Vanceboro High School.

Blodgett, Lucy Alice, Surry.
Teacher, Fort Fairfield.

Bosworth, Lewis Wellman, Oldtown.
Student, Oldtown High School.

Boyd, Elmar Trickey, 234 French St., Bangor.
Principal Brewer High School.

Buckley, Kathleen Louise, Bucksport.
Teacher in Rural School, Bucksport Center.

Burnham, Agnes Rowena, Oldtown.
Teacher in Rural School, Argyle.

Burrill, Gertrude Blanche, Dedham.
Teacher, Holden.

Burton, Mrs. Lucy Agness, West Pittsfield.
Teacher in Graded School, Pittsfield.

Carr, Cleora M., Oldtown.
Student, High School.

Carr, Richard David, Oldtown.
Student, Oldtown High School.

Colburn, Harriet Belle, Orono.
Teacher in Rural School.

Colburn, Nellie Augusta, Orono.
Teacher in Orono Schools.

Cook, Edith Farnham, Palmyra.
Teacher.

Cordwell, Lillian Adele, Orono.
Teacher in Rural School.

Crane, Elizabeth Dunning, Stillwater.
Teacher in Grammar School, Great Works.

Cornforth, Edna Amy, New Portland.
Teacher in Rural School, Lexington.

Cowan, Mary Abigail, Orono.
Teacher.

Crockett, Mrs. Flora Hooper, East Holden.
Teacher in Rural School.
Crowell, Charlotte Edith, Orono.
Teacher, Intermediate School, Orono.
Curtis, Lilla Eliza, Brewer.
Teacher, Intermediate Grades, Rumford Falls.
Curtis, Etta Susie, Etna.
Teacher in Rural School.
Danforth, Florence Marion, La Grange.
Teacher in Rural School.
Davis, Clara Lizzie, Veazie.
Teacher in Intermediate School.
Day, Frank Almon, La Grange.
Teacher.
Douglass, Ella Jane, Bath.
Teacher in Graded School.
Douglass, Nellie Maria, Bluehill.
Teacher, East Bluehill Grammar School.
Dunbar, Addie W., North Castine.
Teacher in Castine.
Dunbar, Helen Marion, North Castine.
Teacher in Waterville.
Dunn, Nina Carle, Orono.
Teacher in Rural Schools.
Dunn, Rena Ethel, Orono.
Teacher in Rural School, Argyle.
Dunton, Angie M., Bath.
Teacher in Graded School.
Emery, Eva Lillian, Howland.
Teacher in Rural School.
Farnham, Esther Frances, East Orland.
Teacher.
Farrington, Rosilla Susan, Brewer.
Assistant Primary School.
Fernald, Frankie May, Winn.
Teacher, Rural School.
Folsom, Ethel Lenora, Stillwater.
Student, Oldtown High School.
Freeman, Lizzie N., Pittsfield.
Teacher Intermediate School.

Gilroy, Florence Josephine, Stillwater.
Teacher Intermediate School.
Grant, Myrtle Forester, Bar Harbor.
Teacher in Grammar School.
Ginnell, Martha Edna, East Exeter.
Teacher in Rural School, Exeter.
Grey, Ida Luretta, Mattawamkeag.
Teacher in Rural School.
Hamlin, George Otis, Orono.
Student at University of Maine.
Hammill, Alice M., Brookton.
Teacher in Rural School.
Hammill, Annabel, Brookton.
Teacher in Rural School.
Hanson, Myrtie Ellen, Pittsfield.
Teacher in Primary School.
Hayden, Savilla Moore, Burlington.
Teacher, Primary School, Mattawamkeag.
Haynes, Evangeline Mabel, Oldtown.
Teacher in High School.
Higgins, Angie May, Clinton.
Teacher.
Higgins, Leonora Gay, Ellsworth.
Teacher.
Hilton, George Libby, Orono.
Student at University of Maine.
Holmes, Edith Belle, Orono.
Teacher.
Horne, Effie Mynette, Pittsfield.
Teacher in Rural School in Hartland.
Houston, Mabel Rosa, Etna.
Teacher.
Johonnett, Emma Jane, Palmyra.
Teacher in Rural School.
Johnson, Mrs. Rosamond, Oldtown.
Teacher.
Jordan, Bertha Ethelyn, Bayside.
Teacher.
Kingsbury, Nicie Adelaide, Frankfort.
Lancaster, Ina Maude, West Pittsfield.
Teacher in Clinton.

Leavitt, Lizzie Mae, Bradley.
Music Teacher, Oldtown.
Lincoln, Alice May, Hartland.
Teacher.
Lizzotte, Clara M., Oldtown.
Teacher, Primary School.
Longley, Percy Roy, St. Albans.
Superintendent of Schools and Principal of High School.
Loud, Florence, Plymouth.
Teacher.
Lovejoy, Everett Stearns, La Grange.
Student.
Lynch, Mary Adelaide, Orono.
Teacher.
McCarthy, Matthew, 182 York St., Bangor.
Teacher.
MacConville, Lilian H., 596 Hammond St., Bangor.
Teacher.
MacFarland, Lilian, Lamoine.
Teacher in Rural School.
MacKenzie, Mina Agnes, 40 Berkeley St., Boston, Mass.
Teacher of Cookery.
McNamara, Mary Agnes, Orono.
McPheters, Mary Addie, Costigan.
Teacher.
Maddan, Lucie Francis, Oldtown.
Teacher.
Maddan, Martin Crowell, Oldtown.
Maddocks, Georgia Vynes, Dedham.
Teacher.
Mansfield, Tena Helen, Orono.
Teacher.
Marsh, Mattie Cora, Orono.
Teacher, Garland.
Mathews, Annie Amelia, Stillwater.
Teacher.
Mayo, Lizzie, Hampden Corner.
Teacher in Rural School.
Merrill, Florence Annie, Stillwater.
Teacher, Oldtown Primary School.

Miller, Addie Mae, Greenfield.
Teacher.

Moore, Hoyt Augustus, Ellsworth.
Principal of Ellsworth High School.

Moore, Lizzie Smith, Ellsworth Falls.
Teacher in Graded Schools.

Morse, Ernest Edwin, Rumford Falls.
Principal, Buckfield High School.

Mosher, Frances B., Orono.
Teacher, Graded School.

Mosher, Ada W., Orono.
Teacher, Montague.

Mutty, Eva Rose, South Brewer.
Principal, Brewer Grammar School.

Nichols, Maud Evelyn, Bucksport.
Teacher in Rural School in Trescott.

Nichols, Nancy Pendleton, Bucksport.
Teacher, East Hampden Grammar School.

Nutter, Margaret May, Etna.
Teacher.

Patten, Kate Edna, West Pittsfield.

Patten, Minnie Blanche, West Pittsfield.
Teacher, Pittsfield.

Perkins, DeForest Henry, North Brooksville.
Student at University of Maine.

Perry, Angelina, Orono.

Perry, Eva Virginia, Orono.
Teacher.

Piper, Isadora, Belfast.
Teacher Primary School.

Pratt, Helen N., Oldtown.
Teacher, Oldtown Intermediate School.

Powell, Mildred Louise, Orono.
Student in University of Maine.

Preble, Laura Margaret, East Lowell.
Teacher in Lowell.

Pullen, Frances Kenney, Bangor.
Teacher, Morgan Preparatory School, Portsmouth, N. H.

Remick, Hettie Florence, Ellsworth.
Teacher, Ellsworth.

Seavey, Haller David, 5 Ohio St., Bangor.
Student.

Smith, Grace May, Mattawamkeag.
Teacher, Rural School, Macwahoc.

Snow, Annie Maria, Orono.

Snow, Maud Washburn, Orono.

Sprague, May Etta, Vanceboro.
Teacher in Intermediate School.

Stedman, Rowena Belle, West Hartland.
Teacher, Bean's Corner, Hartland.

Stuart, Mrs. Nettie, Plymouth.
Superintendent of Schools.

Sullivan, Mae Elizabeth, Orono.
Teacher.

Sylvester, Viola Elcena, Etna.
Teacher.

Thomas, Ethel Etta, Belfast.
Teacher, Rural School.

Thomas, Edith Hattie, Belfast.
Teacher, Rural School.

Wadsworth, Abbie Alberta, Belfast.
Teacher in Graded School.

Webster, Alice Emma, Verona P. O., Bucksport.
Teacher.

White, Nellie Blanche, Orono.

Wingate, Dora Maria, East Corinth.
Teacher.

Worcester, Ada Leila, Strong.
Teacher, Freeman.

Young, Eda Stella, Winterport.
Teacher.

Young, Susie May, Winterport.
Teacher.

SUMMARY.

Post Graduate Students,	7
Seniors,	46
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